

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

IN RE: INSULIN PRICING
LITIGATION

No. 2:23-md-03080
MDL No. 3080

JUDGE BRIAN R. MARTINOTTI
JUDGE RUKHSANAH L. SINGH

DECLARATION OF MAURA R.
GROSSMAN, J.D., PH.D.

DECLARATION OF MAURA R. GROSSMAN, J.D., PH.D.

I, Maura R. Grossman, declare as follows:

I. Background and Expertise

1. I am a Research (Full) Professor in the David R. Cheriton School of Computer Science, cross-appointed to the School of Public Health Sciences, at the University of Waterloo; an Adjunct Professor of Law at Osgoode Hall Law School of York University; and an Affiliate Faculty Member of the Vector Institute of Artificial Intelligence, all in Ontario, Canada. I am also an eDiscovery attorney and consultant at Maura Grossman Law in Buffalo, New York, U.S.A.

2. I received my Juris Doctorate (J.D.), magna cum laude, Order of the Coif, from the Georgetown University Law Center. I also hold masters (M.A.) and doctoral (Ph.D.) degrees from the Derner Institute of Advanced Psychological Studies at Adelphi University, and a Bachelor of Arts (A.B.), magna cum laude, with Honors in Psychology, from Brown University.

3. Before opening my own law and consulting practice in 2016, I was, for 17 years, a litigator at Wachtell, Lipton, Rosen, and Katz, in New York City. Since 2006, I have focused my practice exclusively on advising lawyers, their clients, and others on legal, technical, and strategic issues involving eDiscovery and information governance. Recently, I have also begun to advise on matters related to the development and use of artificial intelligence (“AI”).

4. I am a globally recognized expert in search and review, and in particular, technology-assisted review (“TAR”) technology, processes, and evaluation. I have personally been involved in hundreds of TAR reviews. In *In Rio Tinto v. Vale*, 2015 WL 4367250 (S.D.N.Y. July 15, 2014), where Magistrate Judge Andrew J. Peck appointed me to resolve complex technical disputes in connection with the evaluation of the parties’ TAR processes, he referred to me as “one of the most knowledgeable lawyers (if not *the* most knowledgeable lawyer) about TAR.” *Id.* at *1 (emphasis in original).

That sentiment has been consistently echoed in my Chambers & Partners U.S. and Global rankings since 2013, which state, in pertinent part:

- “There’s no one more knowledgeable in the U.S. and Canada, to be honest.” (2023);
- “Maura Grossman is noted for her expertise in predictive coding and [TAR], and her depth of knowledge sees her regularly appointed as a special master. ‘She is one of the smartest people in the ESI area and she knows TAR better than anyone else. She is a force to be reckoned with, she is so smart, so insightful, she is constantly looking at how to move the bar forward, and as a result, she is a go-to resource.’ ‘As one of the innovators of TAR, and a thought leader in the field, she provides unparalleled expertise, and not only is she a capable advocate, but her positions are reasoned and based on proven scientific principles.’” (2021-2022);
- “Maura Grossman is noted for her expertise in predictive coding and [TAR], with peers reporting: ‘She knows more about TAR than anybody in the world.’ Her depth of knowledge sees her regularly appointed as a special master. . . . ‘Her legal and technical skills and services are superlative.’” (2020);

- “Maura Grossman is widely acknowledged to be one of the most distinguished specialists in predictive coding and is lauded as ‘the queen of TAR.’ She is routinely appointed as a special master. ‘She changed the paradigm and created tools and thinking. She is brilliant.’” (2019); and
- “Maura Grossman is a recognized leader in TAR work . . . ‘She has been a trailblazer and thought leader in the use of artificial intelligence in e-discovery.’ She is frequently called upon to act as a special master, mediator, and court-appointed expert, where she attracts praise for her ‘encyclopedic knowledge of e-discovery law.’” (2018).

5. Since 2011, I have served as a court-appointed master in 19 high-profile federal and state cases. Those cases are listed in my curriculum vitae (“c.v.”), attached hereto as Exhibit A, at pages 3-5. Several of those matters have specifically involved developing TAR protocols for the parties, including validation protocols. *See* Special Master’s Order on Preliminary Diagnostic Protocol to Assess the Adequacy of Initial Plaintiffs’ Original and Supplemental Collections, *BCBSM, Inc. et al. v. Walgreen Co. and Walgreens Boots Alliance, Inc.*, No. 1:20-cv-01853, 2023 WL 6852533 (N.D. Ill. July 21, 2023); Order Regarding Search Methodology for Electronically Stored Information, *In re Broiler Chicken Antitrust Litigation*, No. 1:16-cv-08637, 2018 WL 1146371 (N.D. Ill. Jan. 3, 2018); Stipulation and Order Re: Revised Validation Protocol for the Use of Predictive Coding in Discovery, *Rio Tinto PLC v. Vale S.A.*, No. 14-cv-3042 (RMB) (AJP) (S.D.N.Y., Sept 8, 2015) [ECF. 338].

6. My research on TAR methods and validation, along with University of Waterloo Computer Science Professor (now Professor Emeritus) Gordon V. Cormack, has been cited approvingly in many federal and state cases, beginning with *Da Silva Moore v. Publicis Groupe*, 287 F.R.D. 182, 190 (S.D.N.Y. 2012). Most notably, our seminal study, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 17 Rich. J.L. & Tech. 11 (2011), has been widely cited in case law, both in the U.S. and abroad. Published case citations to my search and TAR-related writings are indicated on my c.v. at pages 22-25 and 27-28. My TAR research has been funded by 12 grants and fellowships, including from the Ontario Research Fund, the Canadian Foundation for Innovation, and the National Sciences and Engineering Research Council of Canada. I have authored or co-authored 66 refereed and/or peer-reviewed papers; 32 books, book chapters, and/or journal articles; and 67 other papers, including many specifically addressing TAR processes and evaluation. Those are listed on my c.v. at pages 14-36.

7. Since 2010, I have taught more than a dozen courses on electronic discovery at Columbia Law School, Georgetown University Law Center, Pace University Law School, and Rutgers Law School—Newark. Since 2008, I have delivered over 1,150 talks, primarily on eDiscovery and AI-related topics, many of which have included TAR and many of which have been educational programs for

federal and state judges, by invitation of the court. A complete list of my speaking engagements to date appears at pages 36-124 of my c.v.

8. I have been retained by Plaintiffs in the above-captioned litigation to serve as a consultant on TAR-related issues, particularly as relates to the development and implementation of a TAR protocol in these matters.

9. I submit this declaration on behalf of Plaintiffs in support of the positions they have taken in the TAR proposal Plaintiffs made to Defendant Express Scripts on January 24, 2025.

10. I am generally familiar with the issues related to the TAR process and validation that have been raised in this dispute. I have personal knowledge of the matters set forth herein, and if called upon and sworn as an expert witness, I could and would competently testify thereto.

II. Overview of Key TAR Issues for Conferral

11. When parties discuss how TAR is to be implemented in a given matter, it is typical for them to focus on a few key aspects of the TAR process. The first relates to the software and protocol being used to train the TAR system. The two principal protocols that have become well known in the marketplace are “TAR 1.0” and “TAR 2.0. TAR 2.0, first introduced as “Continuous Active Learning” (“CAL”), is simpler, more straightforward, and yields superior results. Parties will often discuss what kind and how many documents will be used for initial training, how

they will be chosen (*e.g.*, randomly or otherwise), and how often re-training will occur. The second aspect the parties typically discuss is to specify when the training of the TAR tool is to cease and where the threshold or “cut-off” should be drawn to determine which and how many documents should be produced, taking into account the inevitable tradeoffs between review effort, and the accuracy and completeness of the resulting production. For CAL, empirical evidence suggests that as a general proposition, this point has been reached once 10% or fewer of the documents presented by the TAR tool for review are responsive, over a sustained period of time. The final aspect that is discussed is validation of the TAR review process or production. This consists of analyzing one or more samples of the universe of documents subject to TAR to verify that the production has, in fact, captured an acceptable volume of responsive information and that documents that have not been produced are unlikely to be unique or significant, so that the receiving party is not prejudiced by their absence from the production.

III. Process for TAR Training

12. I have consulted with Plaintiffs to assist them in developing a reasonable proposal regarding a sound and efficient TAR workflow and validation process in this matter. Per my recommendation as the co-inventor of the Continuous Active Learning (“CAL”) TAR methodology, for which I hold 10 patents, Express Scripts should use *all* attorney coding decisions for training the TAR model rather

than to “cherry pick” certain coding decisions related to particular documents or reviewers. This is the proper, most effective, and most common approach when using a CAL approach, such as the one Express Scripts is using (*i.e.*, Brainspace CMML). I believe that if Express Scripts intends to use a non-standard CAL training process, with a more selective or limited training set, Express Scripts should be required to disclose and describe its approach so that it can be evaluated to ensure that the training process is not unreasonably biased towards prioritizing narrow concepts or limited categories of documents.

IV. Stopping Criterion for Review

13. It is my recommendation that Express Scripts continue its TAR review until its marginal precision indicates that its review is reasonably complete. Marginal precision refers to the proportion (*i.e.*, percent) of responsive documents that were identified in the last-reviewed batch. Once Express Scripts’ marginal precision falls to 10% or below for two or more consecutive review batches consisting of a total of 1,000 documents (meaning that it is finding only one in 10 documents or less to be responsive), it may suspend the review and conduct validation to confirm that the production is adequate. Using marginal precision as a stopping criterion requires no extra work on the part of the producing party and peer-reviewed empirical evidence shows that using marginal precision as a TAR stopping criterion is a reliable indicator of completeness. *See* Gordon V. Cormack & Maura R. Grossman, *Multi-*

Faceted Recall of Continuous Active Learning for Technology Assisted Review, SIGIR '15, Aug. 2015, at 764–65, a copy of which is attached hereto as Exhibit B. This method has been successfully employed in other comparable matters. *See, e.g., In re Uber Techs, Inc., Passenger Sexual Assault Litig.*, No. 3:23-md-03084 (N.D. Cal 2024); *In re Diisocyanates Antitrust Litig.*, No. 18-1001 MDL No. 2862, 2022 WL 17668470 (W.D. Pa. 2022).

14. Plaintiffs have proposed a stopping criterion that requires a marginal precision of 10% or less based on two or more batches that total at least 1,000 documents to ensure that the measure of marginal precision is *reliable*, as it is entirely possible to achieve a batch or two of documents with lower marginal precision by chance, but it is unlikely that will happen with five consecutive batches of 200 documents or two consecutive batches of 500 documents.

15. Peer-reviewed empirical evidence also shows that continuing the review until the 10% or less stopping criterion is met generally achieves not only high overall recall—meaning the proportion or percent of all responsive documents in the collection that have been found is high—but also high recall for most of the different aspects or facets of relevance, including those that are infrequent. *See* Gordon V. Cormack & Maura R. Grossman, *Multi-Faceted Recall of Continuous Active Learning for Technology Assisted Review*, SIGIR '15, Aug. 2015, at 764–65 (Ex. B hereto). Once the stopping criterion has been met and it is reasonable to

assume that the production may be complete, the adequacy of the review is then verified by examining whether or not a significant number of responsive documents are identified during the validation process, particularly any that reveal new or important aspects or facets of relevance that may have been missed during the TAR process.

V. Validating TAR Model

16. The TAR validation process detailed below, which was proposed by Plaintiffs to Express Scripts, will allow recall to be estimated directly, accurately, and in a fashion that is statistically sound.

(a) A statistically valid sample consisting of three strata will be drawn from the entire TAR population. 500 documents will be drawn, at random, from documents coded responsive by the review team prior to validation; 500 documents will be drawn, at random, from documents coded non-responsive by the review team prior to validation; and 2,000 documents will be drawn, at random, from documents not coded by the review team prior to validation (*i.e.*, the “Null Set”).

(b) The 3,000 documents will be reviewed *de novo* for responsiveness, interleaved in random order, with no indication provided to the validation reviewer of their prior coding status or the sample from which the document was drawn.

(c) Recall will be calculated using the following quantities:

(i) the number of documents in the TAR population that were coded responsive by the review team prior to validation;

(ii) the number of documents sampled from (i) that are coded responsive in the *de novo* validation review;

(iii) the number of documents in the TAR population that were coded non-responsive by the review team prior to validation;

(iv) the number of documents sampled from (iii) that are coded responsive in the *de novo* validation review;

(v) the number of responsive documents in the TAR population that were not coded by the review team prior to validation; and,

(vi) the number of documents from (v) that are coded responsive in the *de novo* validation review.

(d) $\text{Recall} = [(i) \div 500 \times (ii)] \div [(i) \div 500 \times (ii) + (iii) \div 500 \times (iv) + (v) \div 2000 \times (vi)]$

17. This validation protocol is the same as the validation protocol I ordered as the Special Master in *In re Broiler Chicken Antitrust Litigation*, No. 1:16-CV-08637, 2018 WL 1146371 (N.D. Ill. Jan. 3, 2018) (hereinafter “*Broilers*”) and was ordered by the Court in *In re Uber Techs, Inc., Passenger Sexual Assault Litig.*, No. 3:23-md-03084 (N.D. Cal 2024). Attached as Exhibit C to this declaration is the validation protocol from *Broilers*: the Order Regarding Search Methodology for

ESI. Attached as Exhibit D is the ESI protocol entered in *In re Uber Techs, Inc., Passenger Sexual Assault Litig.* This validation method relies upon a stratified sample of the *entire* TAR population (not just the Null Set) so that all documents in the validation sample are reviewed under precisely the same conditions. The sample includes 1,000 previously coded documents and 2,000 previously uncoded documents and uses a blind *de novo* review of all documents in the sample, regardless of their previous coding. This is necessary to ensure that the validation coding for all documents—whether previously reviewed or not—is truly independent of the prior review process and that the validation reviewer is not influenced or biased by knowing the prior coding during the validation review. Other frequently used methods such as Elusion Sampling—sampling only from the Null Set and assuming that all coding decisions made during the review process are correct—do not employ this method and do not yield statistically valid recall estimates. Moreover, the validation method proposed by Plaintiffs does not require meaningfully more effort than typical validation protocols that use Elusion Sampling (*i.e.*, a review of 3,000 documents versus 2,400 documents, respectively).

18. Plaintiffs propose a target recall rate of 80%. This is consistent with the target recall rate used *In re Uber Techs, Inc., Passenger Sexual Assault Litig.* Recall in the range of 70-80% is generally considered adequate if recall is calculated based on a *de novo*, blind, stratified sample of all documents included or excluded from

the production. In my opinion, while a target recall rate of 80% is at the upper end of the acceptable range, it is not unreasonable here considering Plaintiffs' agreement to forego any validation of the search terms used to cull the population prior to employing TAR. There is little doubt that the recall rate achieved would be considerably lower than 80% if recall were to be calculated by including the results of the search-term culling, which is known as the end-to-end recall rate.

19. If the recall estimate approaches or exceeds 80%, one can say with confidence that the review has found as many responsive documents as could reasonably be expected. If the recall estimate falls substantially short of this value, it is necessary to investigate why that is the case. My understanding is that Plaintiffs are not insisting, at this point, that Express Scripts reach this absolute target. They have informed me that they would be willing to meet and confer with Express Scripts regarding the appropriate next steps to take in the event that, after a good faith effort, the 80% recall rate was not achieved. The answer may be to continue TAR review a few more rounds, to conduct targeted keyword searches, to revisit some of the prior reviewer coding (or the *de novo* coding) decisions, or to discontinue the TAR process because the newly identified documents are all duplicative and marginal, but it is impossible to say that before the process has been completed and the nature of the impediment (if any) is known.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on January 28, 2025, in Waterloo, Ontario, Canada.

Maura R. Grossman

MAURA R. GROSSMAN, J.D., PH.D.

EXHIBIT A

Curriculum Vitae
MAURA R. GROSSMAN, J.D., PH.D.

- 229 Corrie Crescent ▪ Waterloo, ON N2L 5W3 Canada ▪
- 519-888-4567, ext. 37522 ▪ maura.grossman@uwaterloo.ca ▪

EDUCATION

Georgetown University Law Center Washington, DC
Juris Doctor, *magna cum laude* 1999

- *Honors and Awards:* Order of the Coif
Dean's List (1L, 2L & 3L)
Executive Notes & Comments Editor of *The Georgetown Law Journal*
CALI Excellence for the Future Awards (Top Student) in Negotiations
Seminar & in The Legal Profession Seminar (Both 3L)
Gewirz Resident Fellow (2L & 3L)
Honors in Legal Research and Writing (1L)

New York University New York, NY
Postdoctoral Certificate in Psychotherapy & Psychoanalysis 1990

North Shore University Hospital / Cornell University Medical College Manhasset, NY
Postdoctoral Fellowship in Child and Adolescent Psychiatry 1984-1985
Doctoral Internship in Adult Psychiatry 1983-1984

Gordon F. Derner Institute of Advanced Psychological Studies / Adelphi University Garden City, NY
Doctor of Philosophy in Clinical / School Psychology 1984
Master of Arts in Psychology 1982

- *Honors and Awards:* Honorable Mention, New York State Psychological Association
Annual Paper Competition

Brown University Providence, RI
Bachelor of Arts, *magna cum laude*, with Honors in Psychology 1980

- *Honors and Awards:* Brown University Undergraduate Teaching Fellowships
National Science Foundation Undergraduate Research
Fellowship

CURRENT EMPLOYMENT

David R. Cheriton School of Computer Science, University of Waterloo Waterloo, ON
Research (Full) Professor 2016–Present
Director of Women in Computer Science 2019–2020
Cross Appointment to the School of Public Health Sciences 2023–Present

Osgoode Hall Law School, York University Toronto, ON
Adjunct Professor of Law 2017–Present

- *Honors and Awards:* 2020 Faculty Teaching Award

Maura Grossman Law
Principal

Buffalo, NY
2016–Present

- *Honors and Awards:* Recipient of the 2021 Shira Scheindlin Lifetime Achievement Award, Zapproved Corporate Ediscovery Hero Awards
Awarded the eDiscovery Specialist (“CEDS”) credential by the Association of Certified eDiscovery Specialists (“ACEDS”) (received the highest score on the qualifying exam in the ten-year history of the organization)

GRANTS & FELLOWSHIPS

1. Recipient of an Officer of the Privacy Commissioner (“OPC”) of Canada Contributions Grant titled *A Pan-Canadian Data Governance Framework for Health Synthetic Data*, as Co-Principal Investigator, in the total amount of \$48,875 CAD (2023-2024).
2. Recipient of a University of Waterloo Joint Cybersecurity and Privacy Institute (“CPI”) and AI Institute Seed Grant titled *A Feasibility Study of Synthetic Health Data’s Privacy, Utility, and Value*, as Co-Principal Investigator, in the total amount of \$20,000 CAD (2023-2024).
3. Recipient of a University of Waterloo Learning Innovation and Teaching Enhancement (“LITE”) Seed Grant titled *An Investigation into Online Versus Face-to-Face Instruction Approaches to Interdisciplinary Learning About Discrimination in Technology*, as Co-Principal Investigator, in the total amount of \$7,500 CAD (2023-2024).
4. Recipient of a University of Waterloo Cybersecurity and Privacy Institute (“CPI”) Seed Grant titled *Understanding the Relationship Between Human Error and Cybercrime in Hybrid/Remote Work*, as Co-Principal Investigator, in the total amount of \$10,000 CAD (2022-2023).
5. Recipient of a Waterloo Cybersecurity and Privacy Institute (“CPI”) Seed Grant titled *Pathways for Black Youth to Careers in Cybersecurity and Computer Science*, as Principal Investigator, in the total amount of \$10,000 CAD (2022-2023).
6. Recipient of an Ontario Research Fund Research Infrastructure (“ORF-RI”) Grant titled *Expediting Knowledge Synthesis Using Artificial Intelligence – CAL®-Synthesi.SR Dashboard*, as a Collaborator, in the total amount of \$148,685 CAD (2022-2027).
7. Recipient of a World Health Organization (“WHO”) Health Emergencies (“WHE”) Programme Grant for *Infection Prevention and Control Ebola Virus Disease Guidance Development: Literature Review and Evidence Synthesis*, as a Co-Investigator, in the total amount of \$192,102.95 CAD (2022).
8. Recipient of a Canada Foundation for Innovation John R. Evans Leaders Fund (“CFI-JELF”) – Funding for Research Infrastructure Grant titled *Expediting Knowledge Synthesis Using Artificial Intelligence – CAL®-Synthesi.SR Dashboard*, as a Collaborator, in the total amount of \$148,685 CAD (2022-2027).
9. Recipient of Natural Sciences and Engineering Research Council of Canada (“NSERC”) Collaborative Research and Training Experience (“CREATE”) Program Grant titled *NSERC CREATE in Responsible Development of AI (“RAI”)*, as a Co-Principal Investigator (“Co-PI”), in the total amount of \$1,650,000 CAD, with \$118,000 CAD total per Co-PI over six years (2021–2027), plus additional matched funds from the David R. Cheriton School of Computer Science and the Faculty of Mathematics at the University of Waterloo

of up to \$150,000 CAD over six years (2021–2027).

10. Recipient of *Wes Graham Faculty Research Fellowship* in the amount of \$12,500 CAD per year (2020–2023).
11. Recipient of Natural Sciences and Engineering Research Council of Canada (“NSERC”) PromoScience Grant in the amount of \$90,000 CAD for *Girls Mean Business* (2020–2021).
12. Recipient of *Clifford Grant for eDiscovery Law* in the amount of \$20,000 USD per year (2020–2023).
13. Recipient of David R. Cheriton School of Computer Science Faculty Start-Up / Operating Grant in the amount of \$10,000 CAD per year (2019–2022).
14. Recipient of Management Grant in the amount of \$35,000 CAD for *Apparatus for High-Recall Information Retrieval* (2018).
15. Recipient of Natural Sciences and Engineering Research Council of Canada (“NSERC”) Discovery Grant in the amount of \$20,000 CAD per year (plus \$3,200 CAD COVID-19 supplement for 2020) for *Evaluation of High-Recall Human-in-the-Loop Information Retrieval Technologies* (2017–2023).
16. Recipient of Ontario Research Fund Research Infrastructure (“ORF-RI”) Grant in the amount of \$67,832 for *Apparatus for High-Recall Information Retrieval* (2017–2022).
17. Recipient of Canadian Foundation for Innovation John R. Evans Leaders Fund (“CFI-JELF”) – Funding for Research Infrastructure Grant in the amount of \$67,832 CAD for *Apparatus for High-Recall Information Retrieval* (2017–2022).
18. Consultant on National Science Foundation Information and Intelligent Systems (“NSF IIS”) Program Grant No. 065250, *Development and Evaluation of Search Technology for Discovery in Civil Litigation* (2011–2017).
19. Principal Investigator on National Institutes of Health (“NIH”) Center for Substance Abuse Prevention (“CSAP”) Grant in the amount of \$1,000,000 USD per year for *Project Step Ahead* (1991–1993).

SPECIAL MASTER APPOINTMENTS

1. *In Re: Hair Relaxer Marketing Sales Practices and Products Liability Litigation*, Case No. 23-CV-818, MDL No. 3060 (N.D. Ill. 2024).
2. *Craigsville Tel. Co. d/b/a Adamswells et al. v. T-Mobile USA, Inc.*, Case No. 19-cv-7190 (N.D. Ill. 2023).
3. *BCBSM, Inc., et al. v. Walgreen Co. and Walgreens Boots Alliance, Inc.*, Case No. 1:20-cv-01853 (N.D. Ill. (Consol. with Civ. Ac. Nos. 1:20-cv-04738, 1:20-cv-03332, 1:20-cv01929, 1:20-cv-04940, and 1:20-cv-01362 (N.D. Ill. 2023)).
 - Issued *Special Master’s Order on Preliminary Allocation of Costs Arising From Order on Remediation*, Case No. 1:20-cv-01853, Consolidated with Case Nos. 1:20-cv-04738, 1:20-cv-03332, 1:20-cv-01929, 1:20-cv-04940, and 1:22-cv-01362 (N.D. Ill. Mar. 4, 2024).

- Issued *Special Master's Order on Preliminary Diagnostic Protocol to Assess the Adequacy of Initial Plaintiffs' Original and Supplemental Collections*, 2023 WL 6852533 (N.D. Ill. July 21, 2023).
- 4. *A.F. Moore & Associates, Inc., et al. v. Maria Pappas, Cook County Treasurer and Ex Officio County Collector, et al.*, Civ. Ac. No. 1:18-cv-04888 (N.D. Ill, 2023).
- 5. *In Re: Blackbaud, Inc., Customer Data Breach Litigation*, Case No. 3:20-mn-02972-JMC, MDL No. 2972 (D. S.C., 2021).
- 6. *Cherry Creek Mortgage, LLC v. Thomas R. Jarboe*, Civ. Ac. No. 18-cv-00462-KLM (D. Colo. 2021).
- 7. *United States ex Rel. Jarboe v. Cherry Creek Mortgage Co., Inc.*, Civ. Ac. 19-cv-01529-CMA-KLM (D. Colo. 2020).
- 8. *Genscape Inc. v. Live Power Intelligence Company NA LLC*, Civ. Ac. No. 18-cv-02525-DDD-KLM (D. Colo. 2020).
- 9. *ABN AMRO Capital USA LLC v. AMMERA Capital Management, LLC*, Index No. 651148/2019 (N.Y. Sup. Ct. I.A.S. Part 48 2019).
- 10. *United States v. Farouki*, Crim. No. 18-cr-00346-PLF (D.D.C. 2019).
- 11. *McNees v. Ocwen Loan Servicing, LLC*, Civ. Ac. No. 16-cv-01055-WJM-KLM (D. Colo. 2019).
- 12. *Vista Partners v. BrainScope Company*, Civ. Ac. No. 19-cv-00138-CMA-SKC (D. Colo. 2019).
- 13. *MAO-MSO Recovery II v. GEICO*, Civ. Ac. Nos. 17-cv-711-PWG and 17-cv-964-PWG (D. Md. 2019).
- 14. *Gilbert v. United States Olympic Committee*, Civ. Ac. No. 18-cv-00981-CMA-MEH (D. Colo. 2018).
- 15. *Airquip v. HomeAdvisor*, Civ. Ac. No. 1:16-cv-01849-PAB-KLM (D. Colo. 2018).
 - Issued *Master's Memorandum Opinion and Order on HomeAdvisor, Inc., IAC/InterActiveCorp., Angi Homeservices, Inc., and CraftJack Inc.'s Motion for Sanctions*, 2023 WL 196414 (D. Colo. Jan. 16, 2023).
 - Cited extensively in Order in *In re HomeAdvisor, Incl Litigation*, Civ. Case No. 16-cv-01849-PAB-KAS (Consolidated with Civ. Ac. No. 18-cv-01802-PAB-KAS), 2024 WL 115126 (D. Colo. Jan. 10, 2024).
- 16. *Murphy v. Lowe's Home Centers, LLC*, Civ. Ac. No. 1:17-cv-01720-REB-KLM (D. Colo. 2018).
- 17. *United States of America v. Michael Cohen*, Crim. Ac. No. 1:18-cr-00602-WHP (S.D.N.Y. 2018) (recommended to the Court by the prosecution).
 - Submission to the Court available at https://archive.org/stream/Michael-Cohen-Court-Documents/2018-04-26-Cohen-28_djvu.txt.
 - Discussed in *Special Master Could Play a Big Role in Trump Lawyer Doc Review*, Bloomberg News (Apr. 18, 2018), available at <https://news.bloomberglaw.com/e-discovery-and-legal-tech/special-master-could-play-big-role-in-trump-lawyer-doc-review>.

18. *In re Broiler Chicken Antitrust Litigation*, No. 16 Civ. 08637 (N.D. Ill. 2017).

- Issued *Order Regarding Search Methodology for Electronically Stored Information*, 2018 WL 1146371 (N.D. Ill. Jan 3, 2018).

19. *Rio Tinto PLC v. Vale S.A.*, No. 14 Civ. 3042 (RMB) (AJP) (S.D.N.Y. 2015).

- Issued *Stipulation and Order Re: Revised Validation and Audit Protocol for the Use of Predictive Coding in Discovery*, Case No. 14-cv-3042 (RMB) (AJP) (S.D.N.Y. Sept. 8, 2015) [Dkt. No. 338].
- Discussed by the Court in *Rio Tinto PLC v. Vale, S.A.*, 2015 WL 436720 (S.D.N.Y. July 15, 2015) (“Ms. Grossman is one of the most knowledgeable lawyers (if not *the* most knowledgeable lawyer) about TAR [...]”).

20. *National Day Labor Organizing Network v. U.S. Immigration and Customs Enforcement Agency*, No. 10 Civ. 3488 (S.D.N.Y. 2011).

EXPERT ENGAGEMENTS

- *Uber Rideshare Cases*, Case No. CJC-21-5188 (Cal. Sup. Ct. S.F. Cty. 2023) and *In re: Uber Technologies, Inc. Passenger Sexual Assault Litigation*, Case No. 3:23-md-3084-CRB (N.D. Cal. 2023).
 - Referenced by the Court in *In re: Uber Technologies, Inc. Passenger Sexual Assault Litigation*, 2024 WL 3491760 (N.D. Cal. Mar. 15, 2024).
- *In re Kraft-Heinz Securities Litigation*, Case No. 1-19-cv-01339 (N.D. Ill. 2022).
- *In the Matter of the Arbitration Between General Re Life Corporation v. American General Life Insurance Company and General Re Life Corporation v. American General Life Insurance Company et al.* (New York, N.Y. 2022).
- *In re DPP Beef Litigation*, Case No. 20-cv-1319 (JRT/HB) (D. Minn. 2022).
- *In re Diisocyanates Antitrust Litigation*, Case No. 2:18-mc-010001-DWA, MDL No. 2862 (W.D. Pa. 2021).
 - Referenced by the Court in *In re Diisocyanates Antitrust Litigation*, 2022 WL 17668470 (W.D. Pa. Oct. 19, 2022).
 - Referenced by the Court in *In re Diisocyanates Antitrust Litigation*, 2021 WL 4295729 (W.D. Pa. Aug. 23, 2021).
- *In re: Valsartan, Losartan, and Irbesartan Products Liability Litigation*, Case No. 1:19-md-02875-RBK-JS (D.N.J. 2020).
 - Referenced by the Court in *In re: Valsartan, Losartan, and Irbesartan Products Liability Litigation*, 337 F.R.D. 610 (D.N.J. 2020).
- *William Morris Endeavor Entertainment, LLC v. Writers Guild of America, West, Inc.*, Case No. 2:19-cv-05465-AB-AFM (C.D. Cal. 2020).
- *In re: Ethiopian Airlines Flight ET 302 Crash*, Lead Case No. 1:19-cv-02170 (Consolidated) (N.D. Ill. 2020).

- *Kalra v. Mercedes Benz Canada Inc.*, File No. CV-16-550271-00CP (ON Sup. Ct. Justice 2019).
- *Quinn Insurance Ltd. (Under Administration) v. Price Waterhouse Cooper (A Firm)*, Case No. 2012/1540 P (High Court (Commercial) of Ireland).
- *In re Domestic Airline Travel Antitrust Litigation*, MDL No. 2656, Misc. No. 15-1404 (CKK) (D.D.C. 2018).
 - Cited by the Court in *In re Domestic Airline Travel Antitrust Litigation*, 2018 WL 4441507 (D.D.C. Sept. 13, 2018).
- *In re: Intel Corp. CPU Marketing, Sales Practices and Products Liability Litigation*, Case No. 3:18-md-02828-SI (D. Or. 2018), *In re: Intel Corp. Securities Litigation*, Case No. 18-cv-00507-YGR (N.D. Cal. 2018), *Lipovich v. Krzanich*, Case No. 5:18-cv-01489 (N.D. Cal. 2018), and *In re: Intel Corp. Shareholder Derivative Litigation*, Case No. 5:17-md-02773-LHK-NMC (N.D. Cal. 2018).
- *In re Qualcomm Litigation*, Case No. 3:17-cv-00108-GPC-MDD (S.D. Cal. 2017); *Federal Trade Commission v. Qualcomm Inc.*, Case No. 5:17-cv-00220-LHK-NMC (N.D. Cal. 2017); *In re Qualcomm Antitrust Litigation*, Case No. 5:17-md-02773-LHK-NMC (N.D. Cal. 2017).
- *In re: Xarelto (Rivaroxaban) Products Liability Litigation*, MDL No. 14-md-2592 (EEF) (E.D. La. 2017).
- *Federal Trade Commission v. Church & Dwight Co., Inc.*, Case No. 1:10-00149-EGS-JMF D.D.C. 2010) (appointed by Hon. John M. Facciola as advisor to the Court).

SELECTED PROFESSIONAL RECOGNITION

Ranked in *Chambers & Partners USA and Global Litigation: E-Discovery & Information Governance* (2013–2024)

- Named to “Senior Statesperson” Category (2023/2024); “There’s no one more knowledgeable in the US and Canada, to be honest.” (2023).
- “Maura Grossman is noted for her expertise in predictive coding and technology-assisted review, and her depth of knowledge sees her regularly appointed as a special master. ‘She is one of the smartest people in the ESI area and she knows TAR better than anyone else. She is a force to be reckoned with, she is so smart, so insightful, she is constantly looking at how to move the bar forward, and as a result she is a go-to resource.’ ‘As one of the innovators of TAR, and a thought leader in the field, she provides unparalleled expertise, and not only is she a capable advocate, but her positions are reasoned and based on proven scientific principles.’” (2021/2022).
- “Maura Grossman is noted for her expertise in predictive coding and technology-assisted review, with peers reporting: ‘She knows more about TAR than anybody in the world.’ Her depth of knowledge sees her regularly appointed as a special master... ‘Her legal and technical skills and services are superlative.’” (2020).
- “Maura Grossman is widely acknowledged to be one of the most distinguished specialists in predictive coding and is lauded as ‘the queen of TAR.’ She is routinely appointed as a special master. ‘She changed the paradigm and has created tools and thinking. She is brilliant.’” (2019).
- “Maura Grossman is a recognized leader in TAR work. . . ‘She’s been a trailblazer and thought leader in the use of artificial intelligence in e-discovery.’ She is also frequently called upon to act as a special master, mediator, and court-appointed expert, where she attracts praise for her ‘encyclopedic

knowledge of e-discovery law.” (2018).

Named by *Who’s Who Legal: Global Elite Thought Leaders – Litigation – E-Discovery*, as one of nine (2024-2025), eight (2023), three (2022), six (2021), five (2020), or six (2019) top eDiscovery Lawyers worldwide (“Maura Grossman sits among Canada’s finest e-discovery specialists, with contributors saying that ‘there is nobody with more knowledge about e-discovery here or abroad’” (2022); “‘one of the leading figures in North America’ for eDiscovery matters and ‘well-known for her expertise on technology assisted review’” (2021); (“‘probably the leading name in e-discovery’ applaud sources, adding she is a ‘future-thinker, bringing innovative thinking to the practice’” (2020); and “‘an elite eDiscovery specialist,’ who is ‘one of the leading experts, if not the leading expert in technology-assisted review’” (2019)).

Named by *Who’s Who Litigation: Thought Leaders – Commercial Litigation – E-Discovery (Canada) E-Discovery Practitioners – Canada* as one of ten (2024) and seven (2023) Canadian thought leaders in eDiscovery, widely recognized as “‘a trailblazer’ in the field across Canada and the US,” and as “a guru in the e-discovery space” (2022), “among the World’s highest-ranking eDiscovery lawyers . . . [a] well respected thought leader in the e-discovery space’ who stands out as a ‘perfect combination of lawyer and technologist’” (2020), as “one of the leading experts, if not the leading expert, in technology-assisted review” (2019), and as a “Leading Individual” and “Most Highly Regarded” (2018) (“Commentators say ‘she is ‘a star’ in the market and hold her in high esteem as ‘a highly effective legal expert on technology and machine learning algorithms.’”).

Selected by the CENTRE@CLEF2019: Maura R. Grossman and Gordon V. Cormack, *MRG_UWaterloo and Waterloo Cormack Participation in the TREC 2017 Common Core Track*, published in the Proc. of the Text Retrieval Conference (“TREC”) 2017, selected for “a joint CLEF/NCTIR/TREC Task challenging participants to reproduce the best results of the most interesting systems in previous additions of CLEF/NCTIR/TREC” (2019).

Named by *The Obelisk* as “One of the Top Six Women in Law Who are Changing the Legal Industry as We Know It” (2018).

Named by the ABA Legal Technology Resource Center to its list of Ten Top “Women in Legal Tech” (2017).

Named by Fastcase to the *Fastcase50 List* (2017), honoring the year’s 50 “smartest, most courageous innovators, techies, visionaries, and leaders in the law.”

Named by the Association of Certified E-Discovery Specialists (“ACEDS”) and Women in eDiscovery (“WiE”) as a “Pioneer and Innovator in eDiscovery and Legal Technology” (2017).

Named by the *American Bar Association (“ABA”) Journal* as a “Legal Rebel” (Sept. 2016 issue), honoring “the 10 most notable innovators and mavericks in the legal profession.”

Profiled in a feature story in *The American Lawyer* (Feb. 2016 issue), “The Lawyer Inventor: Maura Grossman of Wachtell Developed a Better Way to Do E-Discovery. Why are So Few Other Firms Taking a Lead with Tech?” by Susan Beck.

Ranked in *Who’s Who Legal: E-Discovery Analysis* as “‘sensational’ according to her peers and ‘a go-to’ in the area” of eDiscovery (2015 & 2016).

BAR MEMBERSHIPS

New York State
Southern District of New York

2000–Present
2002–Present

Eastern District of New York

2002–Present

OTHER LEGAL EXPERIENCE

Wachtell, Lipton, Rosen & Katz
Of Counsel
Counsel
Litigation Associate

New York, NY
2013–2016
2007–2013
1999–2003 & 2004–2006

Altria Corporate Services, Inc.
Assistant General Counsel

New York, NY
2003

Kirkland & Ellis
Summer Associate

New York, NY
1998

Powell, Goldstein, Frazer & Murphy, LLP
Summer Associate

Washington, DC
1997

PSYCHOLOGY EXPERIENCE

Fordham-Tremont Community Mental Health Center / St. Barnabus Hospital
Deputy Director for Clinical & Preventive Services

Bronx, NY
1991–1996

- *Honors and Awards* Certificate of Recognition for Innovative Mental Health Planning in New York State, Mental Health Planning Advisory Council
Creative Connections Award for Systems Initiatives, New York City Department of Mental Health, Mental Retardation and Alcoholism Services
Certificate of Recognition for Excellence in Bringing Mental Illness Awareness to the Public, American Psychiatric Association
Certificate of Recognition for Outstanding Contribution to Mental Illness Awareness Week, Bronx Borough President's Office

Private Practice
Psychologist & Consultant

Forest Hills, NY
1988–1996

Woodhull Medical & Mental Health Center / NYC Health & Hospitals Corporation
Director of Psychological Services

Brooklyn, NY
1988–1996

Pride of Judea Mental Health Center
Psychologist & Director of Training
Fordham University Counseling and Psychological Services
Psychologist & Assistant Director

Queens, NY
1986–1988

Bronx, NY
1985–1986

ADJUNCT FACULTY POSITIONS

Vector Institute of Artificial Intelligence

2018–Present

Toronto, ON

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|---|-----------|------------------|
| Georgetown University Law Center | 2014–2018 | Washington, DC |
| Columbia Law School | 2012–2016 | New York, NY |
| Pace University Law School | 2011–2013 | White Plains, NY |
| Rutgers Law School–Newark | 2010–2012 | Newark, NJ |
| New York College of Osteopathic Medicine | 1992–1996 | Valhalla, NY |
| Columbia University School of Social Work | 1992–1996 | New York, NY |
| New York University | 1989–1991 | New York, NY |
| Queens College of the City University of New York | 1988–1989 | Flushing, NY |
| Gordon F. Derner Institute / Adelphi University | 1981–1988 | Garden City, NY |

COURSES TAUGHT

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| Ethics and Privacy Considerations for Digital Technologies and AI in Health | 2024–Present |
| Legal Values: Artificial Intelligence (Discrimination and Surveillance) | 2024–Present |
| The Social Implications of Computing: Discrimination, Privacy, and Surveillance in Computing | 2023–Present |
| Multidisciplinary Studies in Computer Science: Computing and Discrimination | 2022 |
| The Social Implications of Computing | 2021–Present |
| Ethics Workshop for Data Scientists | 2020–Present |
| Artificial Intelligence: Law, Ethics, and Policy | 2017–2020 |
| Electronic Discovery | 2010–2018 |
| High-Stakes Information Retrieval | 2016 |
| Psychological Assessment | 1981–1989 |

PATENTS

1. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Classifying Electronic Information Using Advanced Active Learning Techniques*, US11080340 (Granted/Issued 2021).
2. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for a Scalable Continuous Active Learning Approach to Information Classification*, US10671675 (Granted/Issued 2020).
3. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Conducting and Terminating Technology Assisted Review*, US10445374 (Granted/Issued 2019).
4. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Conducting and Terminating Technology Assisted Review*, US10353961 (Granted/Issued 2019).
5. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Conducting and Terminating Technology Assisted Review*, US10242001 (Granted/Issued 2019).
6. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Conducting a Highly Autonomous Technology Assisted Review Classification*, US10229117 (Granted/Issued 2019).
7. Maura R. Grossman and G.V. Cormack, *Systems and Methods for Classifying Electronic Information Using Advanced Active Learning Techniques*, US9122681 (Granted/Issued 2014).

8. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Classifying Electronic Information Using Advanced Active Learning Techniques*, US8838606 (Granted/Issued 2014).
9. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Classifying Electronic Information Using Advanced Active Learning Techniques*, US8713023 (Granted/Issued 2014).
10. Maura R. Grossman and Gordon V. Cormack, *Systems and Methods for Classifying Electronic Information Using Advanced Active Learning Techniques*, US9678957 (Granted/Issued 2014).

SOFTWARE DISTRIBUTION

1. Gordon V. Cormack and Maura R. Grossman, *DynEval Information Retrieval Tool*, available at <https://cormack.uwaterloo.ca/sample/> (2018).
2. Mustafa Abualsaud, Nimesh Ghelani, Haotian Zhang, Mark D. Smucker, Gordon V. Cormack, and Maura R. Grossman, *HiCAL: A System for Efficient High-Recall Retrieval*, available at <https://github.com/hical/HiCAL> (2018).
3. Gordon V. Cormack and Maura R. Grossman, *TREC Legal Track Baseline Model Implementation (“BMI”)*, available at <https://cormack.uwaterloo.ca/trecvm/> (2015).
4. Gordon V. Cormack and Maura R. Grossman, *TAR Evaluation Toolkit*, available at <https://cormack.uwaterloo.ca/tar-toolkit/> (2013).

TRADEMARKS

1. *Continuous Active Learning* (Registered Oct. 2019)
2. *CAL* (Registered Oct. 2019)

SELECTED PROFESSIONAL AFFILIATIONS AND SERVICE 2007 – PRESENT

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| <i>Co-Chair</i> , Inaugural Meeting of The Sedona Conference Working Group 13 on Artificial Intelligence and Law | 2024–Present |
| <i>Member</i> , Osgoode Hall Law School Academic and Policy (“APPC 24-25”) Committee | 2024–Present |
| <i>Member</i> , National Center for State Courts (“NCSC”) and the Thomson Reuters Institute (“TRI”) Joint Policy Consortium for Law and Courts AI Policy Workstream on Rules and Practices for AI Adoption | 2024–Present |
| <i>Member</i> , New York City Bar Association Presidential Task Force on Artificial Intelligence and its Subcommittee on the Use of Artificial Intelligence in the Judiciary | 2024–Present |
| <i>Member</i> , New York State Advisory Committee on Artificial Intelligence and the Courts | 2024–Present |

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| <i>Member</i> , Global Academic Network of the Center for AI and Digital Policy (“CAIDP”) | 2024–Present |
| <i>Member</i> , University of Waterloo Freedom of Expression and Respectful Engagement Task Force | 2024 |
| <i>Member</i> , Ontario Civil Rules Committee AI Standing Subcommittee | 2023–Present |
| <i>Member and Co-Chair</i> , American Bar Association (“ABA”) Task Force on Law and Artificial Intelligence and Subcommittee on Artificial Intelligence and the Courts | 2023–Present |
| <i>Member</i> , Advisory Board, Osgoode Certificate Program in E-Discovery Information Governance, and Privacy | 2022–Present |
| <i>Faculty Representative</i> , University of Waterloo Faculty of Mathematics Employee Health and Well-Being Committee / Advisory Committee on Community and Well-Being | 2021–Present |
| <i>Member</i> , Institute of Electrical and Electronics Engineers (“IEEE”) Standards Association Working Group on IEEE P2863™ – Recommended Practice for Organizational Governance of Artificial Intelligence | 2020–Present |
| <i>Planning Committee Member and Co-Chair</i> , Ontario Bar Association (“OBA”), the Law Society of Ontario, and the Advocates’ Society 2020–2024 Digital Evidence and eDiscovery Institutes | 2020–Present |
| <i>Member</i> , Digital Evidence and eDiscovery Working Group (“DDEE”) of the Ontario Bar Association (“OBA”) | 2020–Present |
| <i>Member</i> , Electronic Discovery Reference Model (“EDRM”) Global Advisory Council | 2020–Present |
| <i>Program Committee Member</i> , International Conference on Artificial Intelligence and Law (“ICAIL”) | 2019–Present |
| <i>Member</i> , Global Advisory Board, Association of Certified eDiscovery Specialists (“ACEDS”) | 2019–Present |
| <i>Steering Committee Chair, Vice Chair, and Member, Drafting Team Member and Lead</i> , The Sedona Conference Working Group 7 – Sedona Canada and <i>The Sedona Canada Principles Addressing Electronic Discovery: Third Edition; The Sedona Canada Primer on Artificial Intelligence and the Practice of Law</i> | 2019–Present |
| <i>Member</i> , The Sedona Conference Working Group Series Leadership Council | 2019–Present |
| <i>Member</i> , University of Waterloo Artificial Intelligence (“AI”) Institute | 2017–Present |
| <i>Member</i> , University of Waterloo Cybersecurity and Privacy Institute (“CPI”) | 2017–Present |
| <i>Approved E-Discovery Mediator and E-Discovery Special Master</i> , United States District Court for the Western District of Pennsylvania | 2016–Present |

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| <i>Chair Emeritus, Co-Chair, and Member, Electronic Discovery Committee, New York State Bar Association (“NYSBA”) Commercial and Federal Litigation Section</i> | 2015–Present |
| <i>Member, Advisory Board and Planning Committee, Arizona State University (“ASU”) – Arkfeld Annual eDiscovery and Digital Evidence Conference</i> | 2015–Present |
| <i>Research Collaborator, Volunteer, and Contractor, The Library of Virginia</i> | 2015–Present |
| <ul style="list-style-type: none"> ▪ Reported in Susan Beck, <i>Wachtell E-Discovery Guru Sets Sights on Presidential Race</i>, The American Lawyer (July 27, 2016), available at https://www.law.com/sites/almstaff/2016/07/27/wachtell-e-discovery-guru-sets-sights-on-presidential-race/ ▪ Reported in Gabe Friedman, <i>See and Search Tim Kaine’s Email on This Website</i>, Bloomberg Law: Business & Practice (July 27, 2016), available at https://news.bloomberglaw.com/business-and-practice/see-and-search-tim-kaines-emails-on-this-website ▪ Reported in Victor Li, <i>E-Discovery Pioneer Creates Smart Search for Archive of VP Candidate’s Emails</i>, American Bar Association (“ABA”) Journal (July 28, 2016), available at https://www.abajournal.com/news/article/e_discovery_pioneer_launches_second_act ▪ Reported in Roger Christman, <i>Library Makes New Batch of Emails From Governor Timothy M. Kaine Administration Available Online</i>, The Uncommon Wealth: Voices From the Library of Virginia (Oct. 18, 2018), available at https://uncommonwealth.virginiamemory.com/blog/2018/10/18/library-makes-new-batch-of-emails-from-governor-timothy-m-kaine-administration-available-online-3/ ▪ Reported in Susangray Eaken Page, <i>The Elephant in the Room: Artificial Intelligence Tapped to Help Process a Mountain of Governor Tim Kaine’s Emails</i>, 4 BroadSIDE: The Magazine of the Library of Virginia 10-11 (Dec. 2018). | |
| <i>Planning Committee Co-Chair and Member, and Advisory Board Member, The Georgetown Advanced eDiscovery Institute</i> | 2010–Present |
| <i>Faculty Representative, University of Waterloo Freedom of Expression and Respectful Engagement Task Force</i> | 2024 |
| <i>Member, Board of Directors of the Canadian Legal Information Institute (“CanLII”)</i> | 2023 – 2024 |
| <i>Member and Chair, David R. Cheriton School of Computer Science Equity, Diversity, Inclusion (“EDI”) Committee</i> | 2020 – 2024 |
| <i>University of Waterloo David R. Cheriton School of Computer Science EDI Committee Representative, University of Waterloo Faculty of Mathematics Equity, Diversity, Inclusion, Anti-Racism + Indigenization (“EDI-R+I”) Strategic/Lens Committee</i> | 2021–2023 |
| <i>Workshops Co-Chair, 46th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (“SIGIR 2023”)</i> | 2021–2023 |
| <i>Member, University of Waterloo Faculty of Mathematics Student Course Perceptions Working Group</i> | 2022–2023 |

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| <i>University of Waterloo David R. Cheriton School of Computer Science EDI Committee Representative, University of Waterloo Faculty of Mathematics Equity, Diversity, Inclusion, Anti-Racism + Indigenization (“EDI-R+I”) Strategic/Lens Committee</i> | 2022–2023 |
| <i>Program Area Lead (“PAL”), University of Waterloo Equity, Diversity, Inclusion and Anti-Racism Office (“EDI-RO”) Initiative</i> | 2021–2023 |
| <i>Co-Chair and Member, David R. Cheriton School of Computer Science Women in Computer Science (“WiCS”) Committee</i> | 2019–2022 |
| <i>Member, Technology Working Group of Chief Judge Janet DiFiore’s Committee to Reimagine the Future of New York’s Courts</i> | 2018–2021 |
| <i>Member, University of Waterloo Council on Responsible Innovation and Technology (“CRIT”)</i> | 2018–2021 |
| <i>Member, University of Waterloo School of Computer Science Executive Committee</i> | 2019–2020 |
| <i>Member, University of Waterloo Committee on Women in Mathematics (“WiM”)</i> | 2019–2020 |
| <i>Technical Program Committee Member, 2018 International Workshop on Legal Data Analytics and Mining (“LegDAM 2018”) at the 27th ACM International Conference on Information and Knowledge Management (“CIKM 2018”)</i> | 2018 |
| <i>Organizer and Program Co-Chair, 12th Annual Sedona Conference Institute (“TSCI”) Program on Applying eDiscovery Skills and Technology to All Areas of the Law</i> | 2018 |
| <i>External Reviewer, Canadian Institute for Advanced Research (“CIFAR”) UK Research and Innovation (“UKRI”) and Centre National de la Recherche Scientifique (“CRNS”) Global Competition for AI & Society Research Workshops on Trust in AI Systems</i> | 2018 |
| <i>Member of Judging Panel, Hausfeld LLP / Sedona Conference 2018 William P. Butterfield Award for Excellence in eDiscovery Writing</i> | 2018 |
| <i>Member, Law Committee, The Institute of Electrical and Electronics Engineers (“IEEE”) Global Initiative on Ethics of Autonomous and Intelligent Systems</i> | 2018 |
| <i>Chair, AI Subcommittee and Member, New York State Bar Association (“NYSBA”) Committee on Technology and the Legal Profession</i> | 2017–2021 |
| <i>Member, Balsillie School of International Affairs AI and Human Rights Advisory Board</i> | 2017–2018 |
| <i>Participating Team, National Institute of Standards and Technology’s (“NIST’s”) Text REtrieval Conference (“TREC”) 2017 and 2018 Common Core Tracks</i> | 2017–2018 |
| <i>Participating Team, 2017 and 2018 CLEF eHealth Labs: Technology Assisted Reviews in Empirical Medicine</i> | 2017–2018 |

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| <i>Member, The Benjamin N. Cardozo School of Law Data Law Initiative Advisory Board</i> | 2014–2018 |
| <i>Co-Coordinator and Participating Team, National Institute of Standards and Technology’s (“NIST’s”) Text Retrieval Conference (“TREC”) Total Recall Tracks</i> | 2015–2016 |
| <i>Organizer and Program Chair, The Sedona Conference Institute (“TSCI”) New York</i> | 2013 |
| <i>Steering Committee Member and Member, Seventh Circuit Council on eDiscovery and Digital Information</i> | 2012–2020 |
| <i>Member, Attorney Advisory Group to the Judicial Improvements Committee of the U.S. District Court for the Southern District of New York</i> | 2011 |
| <i>Member, Bloomberg Bureau of National Affairs (“BNA”) Digital Discovery & eEvidence Report Advisory Board</i> | 2010–2018 |
| <i>Co-Coordinator, Topic Authority, and Participating Team, National Institute of Standards and Technology’s (“NIST’s”) Text Retrieval Conference (“TREC”) Legal Tracks</i> | 2008–2011 |
| <i>Member, The Association of the Bar of the City of New York Committee on Professional and Judicial Ethics</i> | 2007–2008 |

RESEARCH INTERESTS

My principal research focus is on high-recall information retrieval (“HRIR”), which falls at the intersection of technology and other disciplines including the law, government archives, and healthcare. In particular, I study the application and evaluation of supervised machine-learning technologies for use in electronic discovery in litigation, in the curation of government records, and for systematic reviews in evidence-based medicine. I also conduct research in the area of the legal, ethical, and policy implications of artificial intelligence.

REFEREED JOURNAL ARTICLES, LAW REVIEWS & PEER-REVIEWED CONFERENCE PAPERS

1. Helen (Weixu) Chen, Maura R. Grossman, and Daniel G. Brown, *Open Dialogue: Exploring Self-Disclosure in Online and In-Person Computer Ethics Education*, in Proc. of the Annual ACM Conference on Innovation and Technology in Computer Science Education (“ITiCSE 2025”) Computing Education Research Track 1-7 (2025). [Under Review]
2. Carolyn Lamb, Daniel G. Brown, and Maura R. Grossman, *Precarity and Solidarity: Preliminary results on a study of queer and disabled fiction writers’ experiences with generative AI*, in Proc. of the 34th Int’l Joint Conference on AI (“AJCAI 2025”) AI, Arts, and Creativity Track 1- 9 (2025). [Under Review]
3. Nicole Shaver, Ba’ Pham, Niyati Vyas, Erin Collins, Alexandria Bennett, Andrew Beck, Becky Skidmore, Maura R. Grossman, Gordon V. Cormack, Shrmistha Mishra, Adriene Chan, David Moher, Melissa Brouwers, Andrea C. Tricco, Vicky Willet, Devika Dexit, April Baller, and Julian Little, *Infection Prevention and Control Measures for Ebola and Marburg Virus Disease*, BMJ Medicine 1-69

(2024). [Under Review]

4. Donna Plett, Kamilla Guliyeva, n, Sujata Mishra, Vera Ninic, Ba' Pham, Margaret Jameison, Paul A. Khan, Sujata Mishra, Vera Ninic, Reid Robson, Fatemeh Yazdi, Areti Angeliki, Gordon V. Cormack, Maura R. Grossman, Wanrudee Isaranuwatichi, Sharon E. Strauss, and Andrea C. Tricco, *Cost-Effectiveness of Knowledge Translation Interventions for Chronic Disease Management in Older Adults: A Systematic Review*, Value in Health 1-113 (2024). [Under Review]
5. Shu-Feng Tsao, Helen Chen, Maura R. Grossman, and Anindya Sen, *Recommended Ethical Guidelines for Health Research Involving Synthetic Data in Canada*, 1-7, npj Digital Medicine (2024). [Under Review]
6. Nicole Shaver, Ba' Pham, Niyati Vyas, Alexandria Bennett, Andrew Beck, Becky Skidmore, Maura R. Grossman, Gordon V. Cormack, Sharmistha Mishra, Adrienne Chan, David Moher, Melissa Browsers, Andrea C. Tricco, and Julian Little, *Infection Prevention and Control Measures for Ebola and Marburg Disease: An Evidence Synthesis*, Int'l J. Public Health ("IJPH") 1-54 (2024). [Under Review]
7. Kaylen J. Pfisterer, Shumit Saha, Yan Fossat, Maura R. Grossman, Alex Wong, Azadeh Yadollahi, Bo Wang, Larisa Dinu, Dimitra Kale, Corinna Leppin, Melissa Oldham, Madison Taylor, Ian Connell, Claire Garnett, Animesh Garg, and Quynh Pham, *Responsible Artificial Intelligence in Clinical Decision Support Systems Requires Good Science: Lessons Learned From an International Roundtable Discussion*, npj Digital Medicine 1-20 (2024). [Under Review]
8. Calvin Hills, Maushumi Bhattacharjee, Tarik Eltanahy, Batool AlMousawi, Sara Ono, Marcus Hui, Ba' Pham, Michelle Swab, Gordon V. Cormack, Maura R. Grossman, Ebrahim Bagheri, and Zack Marshall, *Training Post-Secondary Students on the Ethics of AI: A Scoping Review*, Systematic Reviews 1-__ (2024). [Under Review]
9. Helen Chen, Anindya Sen, Maura R. Grossman, and Shu-Feng Tsao, *Establishing a FAIR, CARE, and Efficient Data Sharing Ecosystem for Canada, Privacy in Statistical Databases ("PSD") 2024* (May 2024). [Under Review]
10. Helen Weixu Chen, Maura R. Grossman, and Daniel G. Brown, *Self-Disclosure and Beyond: Learnings From an Online vs. In-Person Computing Ethics Course*, 56th ACM Technical Symposium on Computer Science Education ("SIGCSE TS 2025") (2025). [Accepted; In progress]
11. Abhishek Dalal, Chongyang Gao, Paul W. Grimm, Maura R. Grossman, Daniel W. Linna, Jr., Chiara Pulice, V.S. Subrahmanian, and John Turnheim, *Deepfakes in Court: How Judges Can Proactively Manage Alleged AI-Generated Material in National Security Cases*, The U. of Chicago Legal Forum 75-113 (2024).
 - Discussed at length in Advisory Committee on Evidence Rules, *November 8, 2024 Agenda Book*, U.S. Courts, Tab. 4, 219-271 (Oct. 15, 2024).
 - Featured in Mary Bennett and Rob Robinson, *From Evidence to Misinformation: Courts Brace for Deepfake Challenges*, JD Supra (Oct. 2, 2024).
 - Discussed at length in Ralph Losey, *The Problem of Deepfakes and AI-Generated Evidence: Is It Time to Revise the Rules of Evidence – Part Two*, eDiscovery Team (Sept. 23, 2024).
 - Discussed at length in Ralph Losey, *The Problem of Deepfakes and AI-Generated Evidence: Is It Time to Revise the Rules of Evidence? – Part Two*, JD Supra (Sept. 20, 2024).
 - Featured in Isha Marathe, *4 Ways Judges Can Start Tackling Deepfake Authenticity Challenges*, Legaltech News (Sept. 16, 2024).

- Ranked by SSRN on *Top-Ten List of Most Downloaded Papers* (Sept. 14 – 18 and Oct. 8 – 9, 2024).
 - Featured in Rob Robinson, *From Evidence to Misinformation: Courts Brace for Deepfake Challenges*, Complex Discovery (Sept. 11, 2024).
 - Featured in Doug Austin, *Deepfakes in Court and How Judges Should Manage AI-Generated Material: Artificial Intelligence Trends*, eDiscovery Today (Sept. 11, 2024).
 - Reprinted as Northwestern Public Law Research Paper 24-26 (2024).
 - Reprinted as Northwestern Law and Economic Research Paper 24-18 (2024).
 - Preprinted on SSRN at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4943841.
12. Owen Chambers, Robin Cohen, Maura R. Grossman, Liam Hebert, and Elias Awad, *Mining user study data to judge the merit of a model for supporting user-specific explanations of AI systems*, 40:6 J. of Computational Intelligence 1-27 (Dec. 2024).
 13. Anindya Sen, Helen Chen, Maura R. Grossman, and Shu-Feng Tsao, *A Welfare Test for Patient Data Sharing*, 71:1 The Review of Income and Wealth 1-20 (Feb. 2025).
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 - Featured in Samantha Green, *Can Technology-Assisted Review Expedite Finding the Cure for COVID-19?*, JD Supra (May 21, 2020) and Epiq Angle (May 20, 2020).
 - Featured in *Using Technology-Assisted Review to Find Effective Treatment, Procedures to Mitigate COVID-19*, Association for Computing Machinery ("ACM") TechNews (May 11, 2020).
 - Featured in Doug Austin, *Maura Grossman and Gordon Cormack Put TAR to Work to Help with the COVID-19 Fight: eDiscovery Trends*, eDiscovery Today (May 7, 2020).
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 136. Maura R. Grossman (ed.-in-chief), *Bench Book for New York State Judges Pertaining to the Discovery of Electronically Stored Information (“ESI”)*, 1-24 (N.Y.S. Unified Court System Aug. 2015).
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willing to consider the opportunities for reducing the burden or expense of discovery as reliable means of searching electronically stored information become available.”]

139. Maura R. Grossman (primary drafter), 2013 revisions to Sections 202.12(b) and 202.12(c) of the Uniform Rules for the New York Supreme and County Courts and 2013 revisions to Rule 8 of Section 202.70(g) of the Rules of Practice for the New York Commercial Division of the New York Supreme and County Courts (2013).
140. Daniel J. Capra, Hon. Sidney A. Fitzwater, Hon. Lee Rosenthal, Hon. Paul Grimm, Hon. Paul S. Diamond, Hon. John Facciola, Hon. Geraldine Soat Brown, John Barkett, Chilton Varner, Ariana Tadler, Maura R. Grossman, Steven Morrison, Daniel Smith, Edwin Buffmire, Ken Brown, Allyson Haynes Stuart, Rick Marcus, Ann Murphy, and Liesa Richter, *Reinvigorating Rule 502*, Evidence Committee Symposium on Rule 502: Panel Discussion, 81 Fordham L. Rev. 1533-86 (2013).
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142. Maura R. Grossman, *S.D.N.Y. Opinion Paves Way for Use of Technology-Assisted Review in E-Discovery*, Wachtell, Lipton, Rosen & Katz Client Memorandum (Feb. 26, 2012).
143. John F. Savarese, Ralph M. Levene, Wayne C. Carlin, David B. Anders, David Gruenstein, David M. Murphy, Jonathan M. Moses, and Maura R. Grossman, *White Collar and Regulatory Enforcement: What to Expect in 2012*, LXXXiii Corporation 1-8 (2012), 48 Bank and Corp. Gov. L. Reporter 155-60 (2012), and The Harvard L. School Forum on Corp. Gov. and Fin. Reg. (Feb. 3, 2012).
144. Maura R. Grossman (primary drafter), Appendix B to *In re: Pilot Project Regarding Case Mgmt. Techniques for Complex Civil Cases in the S.D.N.Y.*, Case No. 11-mc-00388-LAP, Standing Order 18-39 (Nov. 1, 2011).
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146. George T. Conway III and Maura R. Grossman, Brief for *Amicus Curiae* Chamber of Commerce of the United States of America in Support of Defendant’s Objections to the Magistrate Judge’s October 11, 2011 Order, *Pippens v. KPMG LLP*, Case No. 11 Civ. 0377 (CM) (JLC) (S.D.N.Y. Nov. 4, 2011), reprinted in Brad Harris and Hon. Ronald J. Hedges (eds.), *Preservation and Proportionality: Perspectives on Lowering the Burden of Preserving Data in Civil Litigation*, Legal Holds Pro Signature Series Appendix, 32-36 (Nov. 2011).
147. Maura R. Grossman, Gordon V. Cormack, Bruce Hedin, and Douglas W. Oard, *Overview of the TREC 2011 Legal Track*, in Ellen M. Voorhies and Lori. P. Buckland, *The Twentieth Text REtrieval Conference (“TREC 2011”)* Proc., NIST Special Pub.: SP 500-296, 1-20 (2011).
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149. Maura R. Grossman, *Proportionality Isn't the Challenge, Operationalizing It Is*, in Brad Harris and Hon. Ronald J. Hedges (eds.), *Preservation and Proportionality: Perspectives on Lowering the Burden of Preserving Data in Civil Litigation*, Legal Holds Pro Signature Series 17-18 (Nov. 2011).
150. Maura R. Grossman, *Pension Committee: A Catalyst for Change in the Federal Rules*, in Brad Harris and Hon. Ronald J. Hedges (eds.), *Pension Committee Revisited One Year Later: A Retrospective on the Impact of Judge Scheindlin's Influential Opinion*, Legal Hold Pro Signature Series 30 (Feb. 2011).
151. Peter C. Hein and Maura R. Grossman, *Federal Judge Rules Specified Fields of Metadata Must Be Produced*, Wachtell, Lipton, Rosen & Katz Client Memorandum (Feb. 9, 2011).
152. Gordon V. Cormack, Maura R. Grossman, Bruce Hedin, and Douglas W. Oard, *Overview of the TREC 2010 Legal Track*, in Ellen M. Voorhees and Lori P. Buckland, *The Nineteenth Text REtrieval Conference ("TREC 2010") Proc.*, NIST Special Pub.: SP 500-294, 1-45 (2010).
153. Jeremy R. Feinberg and Maura R. Grossman, *Intro to Cloud Computing and Its Ethical Implications—Is There a Silver Lining?*, The N.Y. Prof'l Responsibility Report ("NYPRR"), 1, 7-10 (May 2010).
154. Maura R. Grossman, *N.Y. Unified Court System Releases E-Discovery Report With Recommendations That Bode Sweeping Changes for E-Discovery Management in State's Courts*, 10(4) Digital Discovery & E-Evidence Reports 83-4 (2010).
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156. Ann Marie Gibbs, Maura R. Grossman, and Babette V.E. Orenstein, *Rule 45 Subpoenas and Non-Party Production Issues: Assessing the Burdens and Costs and Avoiding the Pitfalls*, 1-11 (Lorman Education Services 2010).
157. Maura R. Grossman, *"Utmost Seriousness" Necessary in Preservation of Electronic Evidence*, The Harvard L. School Forum on Corp. Gov. and Fin. Reg. (2 pages) (Feb. 16, 2010).
158. Maura R. Grossman and Hon. Ronald J. Hedges, *Do the Federal Rules Provide For Clawless "Clawbacks"?*, 9(9) Digital Discovery and E-Evidence (3 pages) (2009).
159. Hon. Ronald J. Hedges and Maura R. Grossman, *An Addendum to "Case Management and E-Discovery: Perfect Together?"*, 9(8) Digital Discovery & E-Evidence Report 262-63 (2009).
160. Peter C. Hein, Meyer G. Koplow, and Maura R. Grossman, *Implementation of Document Retention Policy Deemed Spoliation*, Wachtell, Lipton, Rosen & Katz Client Memorandum (Jan. 20, 2009).
161. Kevin F. Brady and Maura R. Grossman, *Mapping the Steps of the E-Discovery Process*, Georgetown Law E-Discovery Training Academy 1-4 (2009).
162. Peter C. Hein, Eric M. Roth, and Maura R. Grossman, *Federal Rule of Evidence 502, Limiting Waiver of Attorney-Client and Work-Product Privileges, Signed Into Law*, 26 Securities Reform Act. Litig. Reporter 49 (2008) and 41 Bank and Corp. Gov. L. Reporter 331 (2008).

163. Maura R. Grossman (primary drafter), *A Lawyer's Ethical Obligations to Retain and to Provide a Client with Electronic Documents Relating to a Representation*, The Ass'n of the Bar of the City of N.Y. Committee on Prof'l and Judicial Ethics Formal Op. 2008-1 1-7 (July 2008).
164. Peter C. Hein, Eric M. Roth, Maura R. Grossman, and Danielle L. Rose, *Proposed Rule of Evidence 502, Limiting Waiver of Attorney-Client and Work-Product Privileges, Advances Towards Congressional Approval*, Wachtell, Lipton, Rosen & Katz Client Memorandum (Dec. 26, 2007).
165. Maura R. Grossman (primary drafter), *Corporate-Family Conflicts, Duty of Loyalty, and Duty to Preserve Confidences and Secrets*, The Ass'n of the Bar of the City of N.Y. Committee on Prof'l and Judicial Ethics Formal Op. 2007-3 1-7 (Sept. 2007).

PRESENTATIONS, SEMINARS, AND WEBINARS 2008 – PRESENT

As a practicing lawyer, much of my scholarly work has been in the form of talks in various settings, including training sessions for judges and government lawyers, and presentations at law schools, bar association events, and industry conferences.

2025 TALKS

1. “Do We Need New Rules of Evidence for AI-Generated Evidence?,” with Daniel Capra, Hon. Paul W. Grimm, and Hon. Patrick J. Schiltz, American Bar Association (“ABA”) Webinar sponsored by the Task Force on Artificial Evidence and the Law (Jan. 9, 2025).
2. “Welcome and Announcements,” with Niloy Ray and Kenneth J. Withers, The Inaugural Meeting of the Sedona Conference Working Group 13 on Artificial Intelligence,” (Phoenix, AZ Jan. 16, 2025).
3. “Session 04: Measurement, Defensibility, and Compliance: Vetting, Validation, and Monitoring of AI Tools and Uses,” with Gordon V. Cormack, Eric Dunleavy, and Bruce Hedin, The Inaugural Meeting of the Sedona Conference Working Group 13 on Artificial Intelligence,” (Phoenix, AZ Jan. 16, 2025).
4. “Session 08: AI and the Courts: Judicial Perspectives,” with Hon. Allison Goddard, Hon. Jill Presser, Hon. Xavier Rodriguez, and Hon. Sam Thumma, The Inaugural Meeting of the Sedona Conference Working Group 13 on Artificial Intelligence,” (Phoenix, AZ Jan. 17, 2025).
5. “Session 10: Where Does Working Group 13 Go From Here?” with Jim Ko, David Moncure, Niloy Ray, and Kenneth J. Withers, The Inaugural Meeting of the Sedona Conference Working Group 13 on Artificial Intelligence,” (Phoenix, AZ Jan. 17, 2025).
6. “AI in Legal Practice: Navigating Legal, Ethical, and Practical Challenges,” with Jennifer Deutsch, Ann E. Gore, and Shannon Yavorsky, Thomson Reuters (WestLegalEd) and Legal Cyber Academy Webinar (Jan. 20, 2025).
7. “Three Blind Mice: Blind Validation in TAR,” with Rachel McAdams, Gordon V. Cormack, Zvid Guruli, and Andrew Harbison, International Legal Technology Association (“ILTA”) Litigation and Practice Support Webinar (Jan. 30, 2025).

2024 TALKS

8. “Guide to Navigating AI and Its Ethical Challenges,” with Jenny Cieplak, Daniel B. Garrie, and Karen Silverman, Thomson Reuters/WestLegalEd and Legal Cyber Academy Webinar (Jan. 5, 2024).
9. “Ethical Issues to Consider When Incorporating AI Into Your Practice,” American Association for Justice (“AAJ”) AI Task Force Webinar (Jan. 18, 2024).
10. “The Impact of Deepfakes on the Justice System,” with Hany Farid and Hon. Paul W. Grimm, Webinar Co-Sponsored by the American Bar Association (“ABA”) Task Force on Artificial Intelligence and the Bolch Judicial Institute at Duke Law School (Jan. 22, 2024).
11. “Let’s Talk AI: Responsible AI with Maura R. Grossman,” with Harold Godwin, Waterloo Artificial Intelligence (“AI”) Institute Podcast Series (Jan. 25, 2024).
12. “Artificial Intelligence: Part I,” with Hon. Paul W. Grimm, Order in the Court Podcast Episode 7, Bolch Judicial Institute at Duke University Law School (Jan. 25, 2024).
13. “Artificial Intelligence: What Do Judges Need to Know?,” with Hon. David Masuhara, National Judicial Institute (“NJI”) National Insolvency Law Seminar (Vancouver, BC Feb. 1, 2024).
14. “Fundamentals of AI, Generative AI, and Deepfakes: What Disciplinary Counsel Need to Know,” National Council of Lawyer Disciplinary Boards (“NCLDB”) 2024 Annual Meeting and Conference (Feb. 9, 2024).
15. “Artificial Intelligence in Healthcare: Challenges and Opportunities,” with Michael Cary, Kathleen McGrow, and Keith Weiner, New York Academy of Medicine Sixth Annual Health Informatics Conference in Collaboration with the Nursing Section (Feb. 12, 2024).
16. “What’s the role of AI in modern legal systems?,” with Melissa Kargiannakis, ask ai podcast episode no. 52 (Feb. 13, 2024).
17. “Fundamentals of AI, Generative AI, and Deepfakes and Issues of Bias,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice Course, at the Maurice A. Deane School of Law of Hofstra University (Feb. 15, 2024).
18. “Artificial Intelligence Session 1: An Introduction,” with Niamh Nic Daeid and Hon. Anthony J. Saunders, National Judicial Institute (“NJI”) National Conference on Gatekeeping Expert Evidence (Vancouver, BC Feb. 23, 2024).
19. “AI, AI, OOOOHHHH!: Legal Ethics, Artificial Intelligence, and the Practice of Law,” with Christopher B. Hopkins and Jan. L. Jacobowitz, Miami-Dade County Bar Association Professionalism Committee (Feb. 29, 2024).
20. “Artificial Intelligence and the Courts,” Illinois State Northern Circuits Conference (Feb. 29, 2024).
21. “AI at Trial,” with Carolyn J. Fairless, Jeffrey J. Frederick, Roslyn Levine, Hon. Samuel A. Thumma, Daniel Wolfe, and David J. Wolfsohn, American College of Trial Lawyers (“ACTL”) 2024 Spring Meeting (Phoenix, AZ Feb. 29, 2024).

22. “Artificial Intelligence: Part II,” with Paul W. Grimm, Order in the Court Podcast Episode 8, Bolch Judicial Institute at Duke University Law School (Mar. 1, 2024).
23. “Ethical Issues When Using AI,” Joint Continuing Legal Education (“CLE”) Program co-sponsored by the Louisiana Association for Justice (“LAJ”) and the Louisiana Judicial College (New Orleans, La. Mar. 8, 2024).
24. “A Primer on AI Technologies and Definitions for Judges and Court Clerks,” with Shay Cleary, Theresa Harris, Stacey Marz, and Hon. Scott Schlegel, Webinar co-sponsored by the American Bar Association (“ABA”) Task Force on Artificial Intelligence and the Law, the American Association for the Advancement of Science (“AAAS”), and the National Center for State Courts (“NCSC”) (Mar. 12, 2024).
25. “A Roundtable on Generative AI: Practical Advice for Attorneys,” with Brian Beck, Dazza Greenwood, Lisa R. Lifshitz, and Karen Silverman, American Bar Association (“ABA”) Task Force on Artificial Intelligence and the Law (Mar. 14, 2024).
26. “AI in the Justice System: Is Trustworthy or Responsible AI Possible?” Youth Tech Labs Speaker Seminar Series (Waterloo, ON Mar. 16, 2024).
27. “Fundamentals of AI, Generative AI, and Deepfakes and the Issues They Pose,” Guest Lecture at Hon. Paul W. Grimm’s Emerging and Challenging Issues in Evidence Law Course at Duke Law School (Mar. 18, 2024).
28. “Let’s Deep Fake Dive into How eDiscovery Pros Make Generative AI Their Greatest Asset,” with Mary Rechteris Bennett, John Brewer, David R. Cohen, Mary Mack, and Kaylee Walstad, Electronic Discovery Reference Model (“EDRM”) and HaystackID Q1 2024 Virtual Workshop (Mar. 18, 2024).
29. “Law and Generative AI,” with Abdi Aidid, Darcia A.C. Senft, and Art Wilson, The Ethics Forum co-sponsored by the Canadian Bar Association (“CBA”) Ethics Subcommittee, the Federation of Law Societies, and The Canadian Association for Legal Ethics (“CALE”) (Toronto, ON Mar. 22, 2024).
30. “Fundamentals of AI, Generative AI, and Deepfakes,” Guest Lecture at Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Mar. 28, 2024).
31. “An eDiscovery AI Primer: Distinguishing Machine Learning From ChatGPT and Other Tools,” with Ari Kaplan, Amy Sellars, and George Socha, Association of Certified eDiscovery Specialists (“ACEDS”) Advisory Board Webinar Series (Mar. 29, 2024).
32. “Session 1 – Artificial Intelligence: What it is, What it Isn’t,” with Brent Arnold, Michael Kearney, Hon. Scott Schlegel, and Lucy Thomson,” The Sedona Conference on AI and the Law, Part I: AI and Civil Litigation (Reston, VA Apr. 4, 2024).
33. “Session 8 – Judicial and Regulatory Responses to Artificial Intelligence,” with Hon. Allison Goddard, Hon. Xavier Rodriguez, and Hon. Scott Schlegel, The Sedona Conference on AI and the Law, Part I: AI and Civil Litigation (Reston, VA Apr. 5, 2024).
34. “Achieving Trustworthy or Responsible AI in Law: Is it Possible?,” Two-Day School on AI and Law hosted by Dhirubhai Ambani Centre for Technology and Law (“DA-CTL”) at the Dhirubhai Ambani Institute of Information and Communications Technology (“DA-IICT”) (Ghandhinagar, India Apr. 5, 2024).

35. “Fundamentals of AI, Generative AI, and Deepfakes in ~30 Minutes,” with Shay Cleary, Hon. Faye McWatt, and Hon. Scott Schlegel, Spring 2024 Meeting of the Canadian Council of Chief Justices (Ottawa, ON Apr. 10, 2024).
36. “Evidentiary Issues and AI,” with Gerald Chan and Hon. Jill Presser, Law Society of Ontario Technology and Legal Practice Continuing Professional Development (“CPD”) Program (Apr. 15, 2024).
37. “Fundamentals of AI, Generative AI, and Deepfakes and Some of the Issues They Pose,” Canadian Federation of University Women Kitchener-Waterloo (Waterloo, ON Apr. 16, 2024).
38. “Fundamentals of AI, Generative AI, and Deepfakes and Some of the Issues They Pose,” Kitchener Bits and Bytes Computer and Technology Club for Seniors (Kitchener, ON Apr. 17, 2024).
39. “AI Unplugged: A Deep Dive into the World of Legal Technology in the Courts,” with Kate Dunnington and Mark Lanterman, Kentucky Justice Association (“KJA”) Webinar (Apr. 22, 2024).
40. “Fundamentals of AI, Generative AI, and Deepfakes and Some of the Issues They Pose,” Presentation to the University of Waterloo Library Staff (Apr. 23, 2024).
41. “Fundamentals of Technology-Assisted Review (“TAR”) for eDiscovery,” Guest Lecture at Craig Ball’s Electronic Discovery and Digital Evidence Course at the University of Texas at Austin School of Law (Apr. 24, 2024).
42. “Fundamentals of AI, Generative AI, and Deepfakes and Some of the Evidentiary Issues They Pose,” Continuing Legal Education (“CLE”) Webinar for Michael Best & Friedrich LLP (Apr. 25, 2024).
43. “Deepfakes and the Courts,” with Hon. Paul W. Grimm and Ari Kaplan, Association of Certified eDiscovery Specialists (“ACEDS”) 2024 Global Advisory Board Webinar Series (Apr. 26, 2024).
44. “AI: Apprehension and Anticipation,” with Michael Ridley and Mita Williams, Opening Session for Scholars Portal Days 2024 on Collaborative Intelligence, sponsored by the Ontario Council of University Libraries (May 1, 2024).
45. “Report on the American Bar Association (“ABA”) Task Force on Law and Artificial Intelligence, the Status of the Possible Effects on the Federal Rules of Evidence, and Agentic AI Systems Performing Tasks of the User, with Dazza Greenwood and Lucy Thomson, 2024 ABA SciTech Information Security Committee Pre-RSAC Meeting (May 4, 2024).
46. “Deepfakes and the Justice System,” with Hon. Paul W. Grimm and Mary Mack, Electronic Discovery Reference Model (“EDRM”) Webinar (May 7, 2024).
47. “Artificial Intelligence in the Courtroom,” with Hon. Jill Presser, National Judicial Institute (“NJI”) Ontario Superior Court of Justice Spring 2024 Education Seminar (Ottawa, ON May 9, 2024).
48. “Deepfakes and the Court,” with Raphaëlle Roy-Beaudoin, National Judicial Institute (“NJI”) AI and Judging Podcast Ep. 6 (May 13, 2024).
49. “AI and Ethics, Regulation, and Access to Justice,” with Ryan Fritsch, Hon. Peter Lauwers, and Edona C. Vila, The Advocates’ Society Program on Artificial Intelligence for Litigators: AI in Court (May 14, 2024).

50. “Fundamentals of AI, Generative AI, and Deepfakes,” Continuing Professional Development (“CPD”) Program at McCarthy, Hansen & Company LLP (Toronto, ON May 16, 2024).
51. “The Impact of Deepfakes on the Justice System,” with Hon. Paul W. Grimm, Guest Lecture at the Judges’ Seminar, Bolch Judicial Institute Judicial LLM Program at Duke Law School (Durham, NC May 24, 2024).
52. “Privacy and Data Governance – Keeping Pace with AI and Emerging Technologies,” with Stephen Cheeseman, David Lawy, Jonathn W. Penney, Leanne Tran, and Anmol Verma, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program (May 29, 2024).
53. “Considerations of Law, Ethics, and Trust in the Use of AI and Healthcare,” Responsible AI Track at Canadian AI (“CAIAC”) 2024 (Guelph, ON May 30, 2024).
54. “Considerations of Trust, Ethics, and Law in the Use of AI in Healthcare,” Guest Lecture for Helen Chen and Zahid Butt’s HLTH 650 Course on Applied Machine Learning and Artificial Intelligence in Public Health and the University of Waterloo School of Public Health AI4Health Lecture Series (Waterloo, ON June 3, 2024).
55. “Module 4: Considerations of Law, Ethics, and Trust in the Use of AI in Healthcare,” with Samantha B. Meyer, WatSPEED Leveraging AI to Improve Healthcare in Canada (Waterloo, ON June 6, 2024).
56. “AI, Generative AI, and Deepfakes in the Courts,” National Judicial College (“NJC”) Administrative Law: Advanced Online Course (June 6, 2024).
57. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, 2024 Public Defender Program – National Forensics College (New York, NY June 9, 2024).
58. “Deepfake Technology,” with Salma Abdi, Pinnguaq’s Root & STEM Podcast, Ep. _ (June 18, 2024).
59. “Session 1: What Artificial Intelligence (“AI”) Is and How It is Being Used,” with Daniel W. Linna, Jr. and Danny Tobey, The Sedona Conference on AI and the Law, Part II: AI and IP Law (Reston, VA June 20, 2024).
60. “Session 3: Facing AI’s Validity, Reliability, Bias, and Evidentiary Challenges,” with Aron Ahmadia, Hon. Paul W. Grimm, and Lestin L. Kenyon, Jr., The Sedona Conference on AI and the Law, Part II: AI and IP Law (Reston, VA June 20, 2024).
61. “Demystifying Artificial Intelligence and AI’s Impact on the Law and Courts,” 2024 Joint Appellate Judges Training Seminar for New York Court of Appeals and the Four Departments of the New York Appellate Division, sponsored by the New York State Judicial Institute (“NYS JI”) (Clayton, NY June 25, 2024).
62. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Presentation to the Hawaii Courts’ Artificial Intelligence Committee (June 28, 2024).
63. “Plenary Session 2: Responsible AI for Decision-Making,” with Merve Hickok, Ollie Ilott, Andrea Renda, and Masaru Yarime, Data for Policy 2024 Conference (London, UK July 10, 2024).

64. “Generative AI as Technology-Assisted Review,” with William Ellwood and Terry Laukkanen, inDEED Podcast Season 1, Ep. 1 (July 15, 2024).
65. “AI in the Courtroom: A Primer,” National Civil Justice Institute (“NCJI”) 32nd Annual Forum for State Appellate Court Judges on Artificial Intelligence and the Courts (Nashville, TN July 20, 2024).
66. “Deep Think: The Future of AI in the Law,” with Joshua Davis, Brian E. McMath, and Hon. Jerry Zimmerer, National Civil Justice Institute (“NCJI”) 32nd Annual Forum for State Appellate Court Judges on Artificial Intelligence and the Courts (Nashville, TN July 20, 2024).
67. “Deepfakes and Hallucinations: AI, Evidence, and the Law with Professor Maura R. Grossman,” with Terri L. Mascherin, American College of Trial Lawyers (“ACTL”) Trial Tested Podcast Season 9, Ep. 3 (July 25, 2024).
68. “Artificial Intelligence: What Every Judge Should Know,” Pennsylvania Conference of State Trial and Appellate Court Judges (“PCSTJ”) 60th Annual Conference (Hershey, PA July 26, 2024).
69. “Navigating the New Frontier: AI’s Legal Landscape and Ethical Implications,” with Stephen Embry, Plenary Session at Federation of Defence and Corporate Counsel (“FDCC”) 2024 Annual Meeting (Toronto, ON July 30, 2024).
70. “Considerations of Law, Ethics, and Trust in the Use of AI in Healthcare,” Balsillie School of International Affairs (“BSIA”) Technology Governance Summer School (Waterloo, ON Aug. 14, 2024).
71. “A Primer on Deepfakes and Admissibility Issues,” with Ralph Artigliere, The Florida College of Advanced Judicial Studies Course on eDiscovery, Admissibility, and Technology (Aug. 27, 2024).
72. “Primer on Artificial Intelligence,” with Hon. Paul W. Grimm, Law and Technology Program for Judges co-sponsored by the Federal Judicial Center (“FJC”) and the Bolch Judicial Institute at Duke Law School (Durham, NC Sept. 4, 2024).
73. “Generative AI and Deepfakes,” with Hon. Paul W. Grimm, Law and Technology Program for Judges co-sponsored by the Federal Judicial Center (“FJC”) and the Bolch Judicial Institute at Duke Law School (Durham, NC Sept. 5, 2024).
74. “AI and Deepfakes in the Courts,” with Hon. Paul W. Grimm, Presentation at the Bolch Judicial Institute Advisory Board Meeting (Durham, NC Sept. 13, 2024).
75. “Emerging Evidentiary Issues in the Digital Age,” with Yohance Bowden, Julia P. Kuan, and James A. Sharer, Practising Law Institute (“PLI”) Trial Evidence 2024 Program (New York, NY Sept. 17, 2024).
76. “Processing and Early Case Analysis: Best Practices and Strategies for Culling, Analysis and Processing,” with Chuck Rothman, Module 1 of Osgoode Certificate in E-Discovery, Information Governance and Privacy (Sept. 17, 2024).
77. “Artificial Intelligence: Challenging Canadian Legal Principles in Privacy, Intellectual Property, and Evidence,” with Benoit Yelle and Suzanne M. Kennedy, Canadian Association of Counsel to Employers 21st Annual Conference (“CACE 2024”) (Montreal, Quebec Sept. 19, 2024).
78. “Artificial Intelligence: Evidentiary Problems Raised by Deepfakes,” 2024 District of Minnesota In-Court Seminar on :Judicial Horizon 2024: Navigating New Legal Landscapes” (Red Wing, MN Sept. 24,

2024).

79. “AI—Evidentiary, Ethical, and Practical Considerations,” with Garrett L. Brodeur, Hon. Allison H. Goddard, and Hon. Jill Presser, American Bar Association (“ABA”) Tax Section’s Tax Practice and Technology Committee (“TP&T”) Virtual Fall Meeting (Sept. 26, 2024).
80. “Fundamentals of AI, Generative AI, and Deepfakes,” Lackawanna Bar Association Thomas M. Holmes, Esq. Bench and Bar Conference (Sept. 27, 2024).
81. “A Fireside Chat with Maura R. Grossman,” with Kriti Sodhi. Keynote at the Opening Ceremonies at TechNova 2024 (Waterloo, ON Sept. 27, 2024).
82. “New Ethics Rules for Using Generative AI in the Practice of Law: Complying with ABA Formal Opinion 512,” with Jan L. Jacobowitz and Kiriaki Tourikis, Strafford Webinar (Sept. 30, 2024).
83. “Fundamentals of AI, Generative AI, and Deepfakes, and Some of the Issues They Pose,” Paralegal Association of North Ohio (“PANO”) (Oct. 1, 2024).
84. “Artificial Intelligence and the Courts,” with Gideon Christian and Hon. Francis O’Brien, National Judicial Institute (“NJI”) 2024 Atlantic Appellate Seminar (Fox Harb’r, NS Oct. 3, 2024).
85. “Considerations of Law, Ethics, and Trust in the Use of AI in Healthcare,” Annual Faculty Retreat of the College of Medicine at the University of Saskatchewan and the Saskatchewan Health Authority (Oct. 5, 2024).
86. “Fundamentals of Technology-Assisted Review (‘TAR’) for eDiscovery,” Guest Lecture at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s School of Law (Oct. 7, 2022).
87. “Fundamentals of AI, GenAI, and Deepfakes, and Some of the Issues They Pose,” Module 5 of Osgoode Certificate in E-Discovery, Information Governance, and Privacy (Oct. 18, 2024).
88. “Fundamentals of AI, Generative AI, and Deepfakes and Some of the Evidentiary and Other Issues They Pose,” with Hon. Paul W. Grimm, National Association of Criminal Defense Lawyers (“NACDL”) and The Center on Privacy and Technology at the Georgetown University Law Center Joint Continuing Legal Education (“CLE”) Program on Artificial Justice: AI, Tech, and Criminal Defense (Washington, DC Oct. 8, 2024).
89. “Considerations of Law, Ethics, and Trust in the Use of AI in Healthcare,” Osgoode Professional Development (“OPD”) Second Annual Forum on Artificial Intelligence and the Law (Oct. 10, 2024).
90. “From Courtroom to Classroom: The Impact of AI in Law and Education,” with Patricia, The AI Purity Podcast Season 1, Ep. 11 (Oct. 15, 2024).
91. “Evidentiary Considerations Related to Acknowledged and Unacknowledged AU-Generated Evidence,” with Hon. James Edgar Baker, Hon. Kent A. Jordan, and Polk Wagner, 77th Judicial

Conference of the Third Judicial Circuit (Avalon, NJ Oct. 17, 2024).

92. “Evidentiary Considerations Related to Acknowledged and Unacknowledged AU-Generated Evidence,” Presentation to the New York State Advisory Committee on AI and the Courts’ Subcommittee on Evidence, Authenticity, and Reliability (Oct. 18, 2024).
93. “Fundamentals of AI, Generative AI, and Deepfakes, and Some of the Issues They Pose,” National Emerging Technologies Council at University of North Texas at Dallas (“UNT Dallas”) College of Law (Oct. 22, 2024).
94. “A Fireside Chat on Developments in AI and eDiscovery,” with Jessica Lockett, Array Canada Key Client Launch Event (Toronto, ON Oct. 23, 2024).
95. “The End of Reality? Unpacking the Challenges of Deepfake Evidence in Court,” with Rebecca Delfino, Justin Herring, and Hon. Evette Pennypacker, Everlaw Summit ’24 (Oct. 24, 2024 San Francisco, CA).
96. “A Deep Dive Into Deepfakes – Reality Check Your Evidence,” with Hon. Paul W. Grimm and Mark Lanterman, Georgetown Advanced eDiscovery Pre-Conference Webinar (Oct. 25, 2024).
97. Generative AI From A to Z (Especially E for Ethics and P for Policy,” Heneim Hutchinson Robitaille (“HHR”) LLP In-House Mandatory Training Program for All Attorneys and Staff (Oct. 28, 2024).
98. “Deepfakes, Disinformation, and the Law,” with Olga Belogova, Suzanne Nossel, and Gary Rose, 2024 Canada-US Legal Issues Symposium on Artificial Intelligence Regulation, Governance, and Liability, co-sponsored by the Canadian-US Law Institute and the Science, Technology, and Innovation Program at the Wilson Center (Washington, DC Oct. 29, 2024).
99. “Why You Should Not be Afraid of AI in Legal,” with Ari Kaplan, Halloween Special Episode of Virtual Lunch Series (Oct. 31, 2024).
100. “Introduction of the Fact Scenario,” Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 1 (Toronto, ON Nov. 1, 2024).
101. “Demonstration and Debrief: Examination for Discovery of the Defendant,” with Matthew Maslow and Sam Rogers, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 1 (Toronto, ON Nov. 1, 2024).
102. “Demonstration and Debrief: Motion Seeking Examination for Discovery of a Non-Party (AI Product Representative,” with Brent Arnold, Zohar Levy, and Hon. Fred Myers, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 1 (Toronto, ON

Nov. 1, 2024).

103. “Demonstration and Debrief: Examination for Discovery of a Non-Party (AI Product Representative,” with Paul-Erik Veel and Aaron Wenner, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 1 (Toronto, ON Nov. 1, 2024).
104. “Demonstration and Debrief: Pretrial Conference,” with Kathryn Manning, Darcy Romaine, and Hon. Ria Tzimas, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 1 (Toronto, ON Nov. 1, 2024).
105. “Judicial Approaches to Acknowledged and Unacknowledged AI-Generated Evidence,” Columbia Science and Technology Law Review (“STLR”) Symposium on Judging Science, in Collaboration with the Columbia Science, Technology, and Intellectual Property Law (“STIPL”) Program (New York, NY Nov. 8, 2024).
106. “Should Lawyers and Judges Be Required to Disclose Their Use of AI?,” with Hon. Xavier Rodriguez and David Zaslow, New York City Bar Association Podcast (Nov. 12, 2024).
107. “eDiscovery Leaders Quick Takes: Insights and Guidance,” with Scott Milner, Jonathan Redgrave, Ariana Tadler, and Paul Weiner, Plenary Session at the Georgetown 2024 Advanced eDiscovery Institute (Washington, DC Nov. 14, 2024).
108. “A Fireside Chat with Matthew Steven William Silk,” Keynote at UW Ethics and AI Symposium (Waterloo, ON Nov. 21, 2024).
109. “Evaluating Corroborative Evidence in Refugee Determinations,” with Joo Eun Kim, Azadeh Tamjeedi, and Simon Wallace, Law Society of Ontario Continuing Professional Development Summit on Immigration Law (Nov. 21, 2024).
110. “Deepfakes and Black Boxes: Navigating the AI Evidence Minefield,” with Gehring Flores, Matt Groh, Mark Kantor, Mark Morril, and Edna Sussman, Fordham 19th Annual Conference on International Arbitration and Mediation (Nov. 22, 2024).
111. “The Limitations and Misuse of Information Retrieval in Legal eDiscovery,” with Gordon V. Cormack, Andrew Harbison, and Bronaugh McManus, La Touche Legal Tech Conference (Dublin, Ireland Nov. 28, 2024).
112. “Deepfakes – Implications and Challenges,” with Jonathan Flood and Jackie O’Mahony, La Touche Legal Tech Conference (Dublin, Ireland Nov. 28, 2024).
113. “Introduction of the Fact Scenario and Day 1 Refresh,” Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day II (Toronto, ON Nov. 29, 2024).

114. “Demonstration and Debrief: Direct and Cross Examination of Plaintiffs’ Expert with Andrea Gonsalves, Nathaniel Read-Ellis, and Hon. Jamie K. Trimble, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 2 (Toronto, ON Nov. 29, 2024).
115. “Perspectives from the Bench,” with Hon. Joseph F. Kenkel, Hon. Peter Lauwers, and Hon. Jill Presser, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 2 (Toronto, ON Nov. 29, 2024).
116. “Challenges, Gaps, and Where We Go From Here,” with Paul Lomic, Amy Salyzyn, and James Tumbridge, Ontario Bar Association (“OBA”) Professional Development (“PD”) Program on AI Trial Advocacy: Your Guide to Handling the Evidentiary Implications of Artificial Intelligence – Day 2 (Toronto, ON Nov. 29, 2024).
117. “Embedding Ethics in Math: Teaching Computer Ethics by Focusing on Discrimination and Surveillance,” with Daniel G. Brown, 2024 Canadian Math Society (“CMS”) Annual Meeting (Dec. 1, 2024).
118. “Maura Grossman—Ethics, Law, and AI, with Matthew Steven William Silk, Reconstructing Philosophy, Season 1, Ep. 1 (Dec. 3, 2024).
119. “Deepfakes in Court: Challenges, Risks, and Mitigating Injustice in Digital,” with Hon. Ralph Artigliere, Ralph Losey, and Mary Mack, co-sponsored by Exterro, eDiscovery Today, Electronic Discovery Reference Model (“EDRM”), and Association of Certified E-Discovery Specialists (“ACEDS”) (Dec. 5, 2024).
120. “Challenges of Deepfakes,” with Hon. Ralph Artigliere, Ralph Losey, and Mary Mack, Benchers of the Law Society of Ontario Futures Committee (Dec. 6, 2024).
121. “Fundamentals of AI, Generative AI and Deepfakes, and Some of the Issues the Pose,” Continuing Legal Education (“CLE”) AI Symposium sponsored by Page One Legal (Nashville, TN Dec. 11, 2024).

2023 TALKS

122. “An Introduction to Legal Technology,” with Terry Laukkanen and Daniel Meyers, 2023 Placement Intensives Training Session, Lincoln Alexander School of Law at Toronto Metropolitan University (Jan. 11, 2023).
123. Ethics and Explainability of AI Algorithms in Legal Use Cases,” with Doug Austin, Mary Mack, and Tom O’Connor, Electronic Discovery Reference Model (“EDRM”) Webinar (Jan. 11, 2023).
124. “The 411 on Special Masters and Discovery Mediators,” with Hon. Iain Johnston, Hon. Kristen L. Mix, Hon. Andrew J. Peck, and Jay Yelton III, Electronic Discovery Reference Model (“EDRM”) Webinar (Feb. 6, 2023).

125. “Processing and Early Case Analysis: Best Practices for Culling, Analysis, and Processing,” with Chuck Rothman, Osgoode Certificate in E-Discovery, Information, and Privacy Program, Osgoode Professional Development (Feb. 7, 2023).
126. “Does Forensic Sketch AI-rtist Pass the NIST Risk Management Test for Trustworthy AI?,” National Science and Engineering Research Council (“NSERC”) Collaborative Research and Training Experience (“CREATE”) Lecture Series on Responsible AI (Feb. 16, 2023).
127. “Fundamentals of Technology-Assisted Review for eDiscovery,” Guest Lecture at Tessa Jacob’s and Robin Perkins’ Electronic Discovery Course at the University of Missouri-Kansas City School of Law (Feb. 23, 2023).
128. “Algorithms, Bots, and Creating Data with Artificial Intelligence,” with Kenya Parrish-Dixon and Ari Kaplan, Association of Certified eDiscovery Specialists (“ACEDS”) Webinar Series (Feb. 24, 2023).
129. “Fundamentals of Artificial Intelligence and Issues of Bias,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice Course, at the Maurice A. Deane School of Law of Hofstra University (Feb. 27, 2023).
130. “Fundamentals of Artificial Intelligence and Issues of Bias,” Osgoode Certificate in E-Discovery, Information, and Privacy, Osgoode Professional Development (Feb. 28, 2023).
131. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, BLG Tech Talk, Q1 2023 Digital Hub (Mar. 8, 2023).
132. “Synthetic Health Data: Opportunities and Challenges for Greater Collaboration in Healthcare,” with Daniel Blumenthal, Michael Duong, and Alan Forster, University of Waterloo Centre for Bioengineering and Biotechnology (“CBB”) and University of Waterloo Cybersecurity and Privacy Institute (“CPI”) Conference on Waterloo for Health, Technology, and Society – Day 2: Ensuring Safe Technology (Waterloo, ON Mar. 9, 2023).
133. “Fundamentals of Artificial Intelligence and Issues of Bias,” Guest Lecture at Cameron Shelly’s Artificial Intelligence and Society: Impact, Ethics, and Equity Course, at the University of Waterloo (Mar. 21, 2023).
134. “The Limitations and Misuses of Information Retrieval in Legal Cases,” Keynote Address at the First International Workshop on Legal Information Retrieval (“Legal IR”) and the Second Workshop on Augmented Intelligence for Technology-Assisted Systems: Evaluation Metrics and Protocols for eDiscovery and Systematic Review Systems (“ALTARS”), at the 45th European Conference on Information Retrieval (“ECIR 2023”) (Dublin, Ireland Apr. 2, 2023).
135. “Opportunities to Improve the State of the Art in Technology-Assisted Review (“TAR”) for eDiscovery,” with Gordon V. Cormack and Andrew Harbison, Presentation to Grant Thornton Germany, Ireland, United Kingdom, and United States (Apr. 4, 2023).
136. “Navigating the Risks of Generative AI: An Expert Panel Discussion,” with Mary Mack, Johannes (“Jan”) C. Scholtes, and John Tredennick, Electronic Discovery Reference Model (“EDRM”) Ripped-From-the-Headlines Flash Webinar Series (Apr. 6, 2023).

137. “Some Comments on Artificial Intelligence and Chat GPT,” with Hon. Allison H. Goddard, The Louis M. Welsh Inn of Court (San Diego, CA Apr. 12, 2023).
138. “Fundamentals of Technology-Assisted Review (‘TAR’) for eDiscovery,” Guest Lecture at Craig Ball’s Electronic Discovery and Digital Evidence Course at the University of Texas at Austin School of Law (Apr. 19, 2023).
139. “Limitations and Misuses of Information Retrieval Methods in Legal eDiscovery,” Artificial Intelligence at Thomson Reuters (“AI@TR”) Invited Speaker Series (May 2, 2023).
140. “Synthetic Health Data as a Potential Enabler of Trust,” Keynote Address at the University of Waterloo WatSPEED, Statistics Canada, Canadian Institute for Health Information (“CIHI”), and Canadian Institute of Public Administration (“IPAC”) Executive Dinner and Roundtable Discussion on Enabling Trust Within Canada’s Data Strategy (Ottawa, ON May 4, 2023).
141. “Artificial Intelligence in Litigation, Arbitration, and Mediation,” with Colin Rule and James Sharer, New York State Bar Association (“NYSBA”) Commercial and Federal (“ComFed”) Litigation Section Spring Meeting (Philadelphia, PA May 7, 2023).
142. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, District of Nevada Annual Federal District Court Conference: Federal Practice Basics and Beyond (Reno, NV May 11, 2023).
143. “Search and Review: Techniques, Protocols, and Validation, with Jeffrey J. Fowler and Stanley M. Gibson, Practising Law Institute (“PLI”) Program on Hot Topics in Electronic Discovery 2023: What Corporate and Outside Counsel Need to Know (New York, NY May 18, 2023).
144. “Cybersecurity and Healthcare,” with Brian Levine, Michael Saylor, Michael Saylor, and Ryan Weydeck, A Cyber Future Foundation (“CFF”) Global Town Hall (May 23, 2023).
145. “Small Breakout Session on Strategic Considerations and Practical Guidance From Key Players and Judges: Special Masters,” with Hon. Dan Polster and David R. Cohen, Bolch Judicial Center and Duke Law School’s Advanced Certificate Program in Mass Tort Multidistrict Litigation (“MDL”) (Durham, NC May 25, 2023).
146. “Achieving Trustworthy AI: Is It Possible?,” Guest Lecture at Helen Chen’s and Zahid Butt’s Graduate Course on Machine Learning and Artificial Intelligence in Public Health and to the Faculty of Applied Health Sciences, University of Waterloo School of Public Health (Waterloo, ON May 31, 2023).
147. “The Impact of Artificial Intelligence and Advanced Technology on the Law and Judging,” with Hon. Paul W. Grimm and Lee Tiedrich, Hon. Paul W. Grimm’s, David F. Levy’s, and Hon. Lee Rosenthal’s Judges Seminar in the Judicial LLM Program at the Bolch Judicial Center of Duke Law School (Durham, NC June 2, 2023).
148. “Latest Tools and Updates for E-Discovery,” with Crystal O’Donnell, Chuck Rothman, and Rocco G. Scocco, Ontario Bar Association (“OBA”) TECHxpo Conference: Maximizing Your Practice’s Performance (Toronto, ON June 9, 2023).
149. “The Equitable Use of Artificial Intelligence and Machine Learning in Healthcare,” with Emma Bluemke, Animesh Garg, Yan Fossat, Jessica Morley, Mohamed (“Mo”) Musbah, Bo Wang, Alexander Wong, and Azadeh Yadollahi, The Centre for Digital Therapeutics (“CDTx”), University Health Network (“UHN”)

and University College London Roundtable (June 15, 2023).

150. “The Generative Defence Lawyer: What You Need to Know About AI Right Now,” with Susie Lindsay, Canadian Defence Lawyers (“CDL”) 25th Anniversary Annual General Meeting and Conference on The Evolution of Resilience: Preparing Your Defence Practice to Meet Social, Technical, and Economic Change Agents (Mono, ON June 16, 2023).
151. “E-Discovery 101: How to Gather and Use Electronically Stored Information,” with Dean DiPilato, Hon. Timothy S. Driscoll, Hon. Ronald J. Hedges, and Gina Sansone-Driscoll, New York State Bar Association Technology and eDiscovery Committees Joint Continuing Legal Education (“CLE”) Webinar (June 20, 2023).
152. “Challenges, Opportunities and Worries – The Responsible Use of Generative AI,” with David Mhlanga, Mausam Mausam, Helen Titilola Olojede, and John Traxler, Commonwealth of Learning (“COL”) Online Panel Discussion (June 22, 2023).
153. “Trials and Tribulations of Conducting and Evaluating a Massive Document Review: Common Errors, Best Practices, and Lessons Learned,” with Gordon V. Cormack, Workshop on Electronic Discovery, 19th International Conference on Artificial Intelligence and the Law (“ICAIL 2023”) (June 23, 2023).
154. “Generative AI: Unpacking the Legal Technology Revolution,” with Carolyn Anger, Gordon V. Cormack, and Xavier Diokno, The Master’s Conference Toronto 2023 (Toronto, ON June 27, 2023).
155. “AI-Generated Evidence and ChatGPT Judgments,” with Kelly Friedman, The Master’s Conference Toronto 2023 (Toronto, ON June 27, 2023).
156. “Fundamentals of Artificial Intelligence for Lawyers and Legal Professionals,” Georgetown Advanced eDiscovery Institute Pre-Conference Webinar (July 18, 2023).
157. “Leaving No One Behind: A case study on SDG9 to advance equity-based access to education and careers in cybersecurity for Canadians of African Descent,” with Candies Kotchapaw and Mohammad Mousa, High-Level Political Forum (“HLPP”) 2023 on Sustainable Development, United Nations Economic and Social Council (“UN-ESOC”) (July 19, 2023).
158. “E-thics: A Lawyer’s Guide to Navigating eDiscovery Ethics,” with Daniel B. Garrie, Michael A. Sherman, and Hon. Randa Trapp, Joint Thomson Reuters (WestLegalEd), Global Cyber Institute, Legal Cyber Academy, and Lexeprint Webinar (July 20, 2023).
159. “The GPTJudge: Justice in an AI World Part I – Fundamentals of Artificial Intelligence,” The International Association of LGBTQ+ Judges,” (Chicago, IL July 24, 2023).
160. “The GPTJudge: Justice in an AI World Part II – Artificial Intelligence and Bias: Impact on the Courts,” The International Association of LGBTQ+ Judges,” (Chicago, IL July 24, 2023).
161. “The GPTJudge: Justice in an AI World Part III – Artificial Intelligence and Deepfakes as Evidence,” The International Association of LGBTQ+ Judges,” (Chicago, IL July 24, 2023).
162. “Industry 4.0 Technology and the Digital Divide,” with Feyisayo Enuiyin, Seun Richards, Oriando Sitcheran, and Jasmine Swimmer, Developing Young Leaders of Tomorrow Today (“DYLOTT”) 2023 Black Diplomacy Global Summit (Toronto, ON July 28, 2023).

163. “Reputational Ruin in Eight Seconds – The New AI Identity Theft,” with Kym Geddes, Jeff Musson, Mike Pollack, and Rob Sciglimpaglia, Episode 7, Third Season of 1: Click 2: Cyber Chaos (“1C2CC”) Podcast (August 2, 2023).
164. “Benefits and Limitations of ChatGPT and Other Forms of Generative AI,” Presentation to the Faculty and Staff of the University of Waterloo School of Accounting and Financial Management (Waterloo, ON Aug. 2, 2023).
165. “Part I: Fundamentals of AI,” Guest Lecture at Jatin Nathwani and Ann Fitz-Gerald’s Graduate Summer School Course on Technology Governance, Balsillie School of International Affairs (“BSIA”) (Waterloo, ON Aug. 16, 2023).
166. “Part II: Achieving Responsible AI,” Guest Lecture at Jatin Nathwani and Ann Fitz-Gerald’s Graduate Summer School Course on Technology Governance, Balsillie School of International Affairs (“BSIA”) (Waterloo, ON Aug. 16, 2023).
167. “Science, Not Art: Information Retrieval in Search and Review,” with Gordon V. Cormack and Bruce Hedin, ILTACON 2023 (Orlando, FL Aug. 21, 2023).
168. “Fundamentals of Generative AI for Judges,” with Hon. Michael Berg, Hon. Allison Goddard, Gary Osborne, and Alex Tievsky, Judicial Education Program for the United States District Court for the Southern District of California (San Diego, CA Sept. 13, 2023).
169. “Generative AI: Hopes and Risks for Transformational Technology,” with Aaron B. Bath, Brian Corbin, Hon. Ronald J. Hedges, and Deborah Jones, Industry and Leadership Track, XChange Conference Sponsored by Exterro and Zapproved (New Orleans, LA Sept. 20, 2023).
170. “Way Too Smart? Ethical Quandaries and the Use of AI,” with Jan L. Jacobowitz, Greg Siskind, and David Ware, Federal Bar Association (“FBA”) Annual Conference (Memphis, TN Sept. 22, 2023).
171. “Fundamentals of Artificial Intelligence and Issues of Bias,” Federal Courts Advocate Section of the Kansas City Metropolitan Bar Association (“KCMBA”) and United States District Court for the District of Kansas Joint Continuing Legal Education (“CLE”) Program (Kansas City, MO Sept. 27, 2023).
172. “The Legal Argument for GenAI to Exist in Law, with Andrew Camel, OpenView Venture Capital’s Closing the Loop Podcast (Sept. 28, 2023).
173. “The Artificial Lawyer: What You Need to Know About AI, Generative AI, and Bias,” National eDiscovery Leadership Institute (“NeLI”) (Kansas City, MO Sept. 28, 2023).
174. “The Ethical Implications and Potential Job Replacement Associated with AI (LLMs),” with Cathy Cobey, Mei Nagappan, and Theo Stratopolus, University of Waterloo Centre for Information Integrity and Systems Assurance (“UW-CISA”) 13th Biennial Symposium (Sept. 30, 2023).
175. “Balancing the Needs of Requesting and Producing Parties – Getting eDiscovery Right: Best Practices and Next Steps,” with James Anderson, Robert A. Clifford, Hon. Joy Flower Conti, and Hon. Iain D. Johnston, RAND Institute for Civil Justice (“ICJ”) Symposium (Washington, DC Oct. 4, 2023).
176. “The Use of Generative AI by Defence Lawyers: Capability and Culpibility,” with Heather Sanderson and Richard Susskind, Joint Canadian Defence Lawyers (“CDL”) and Forum of Insurance Lawyers

(“FOIL”) Webinar (Oct. 5, 2023).

177. “The Rise of AI: Finding Human Design in a Growing Digital World,” with Gregg Springan and Marianela Luppa, Special Keynote Panel, American Academy of Nursing 2023 Health Policy Conference (Washington, DC Oct. 5, 2023).
178. “AI Ethics in Higher Education,” with Stephanie Laggini Flore, Robbie K. Melton’s OpenAI Graduate Course offered through the Tennessee State University (“TSU”) SMART Global Innovative Technologies Division (Oct. 6, 2023).
179. “Trick or Treat? Unmasking AI Disinformation and Manipulation While Revealing Key Legal Issues,” with Theodore F. Claypoole, Bruce de’Medici, and Michael Simon, American Bar Association (“ABA”) Section of Science and Technology Law Fifth Annual Artificial Intelligence and Robotics Institute (Santa Clara, CA Oct. 10, 2023).
180. “Adjudicating at the Edge of Law and Technology,” with Hon. Paul W. Grimm and Chuck Kellner, Plenary Session at Everlaw Summit 2024 (San Francisco, CA Oct. 12, 2023).
181. “JeopTARdy!,” with Leonard Aragon, Jason S. Hartley, and Christopher King, American Bar Association (“ABA”) 2023 Class Actions Institute (Chicago, IL Oct. 19, 2023).
182. “Fundamentals of Artificial Intelligence for Lawyers and Legal Professionals,” Electronic Discovery Reference Model (“EDRM”) Webinar (Oct. 23, 2023).
183. “Artificial Intelligence and the Justice System: A Primer,” Ontario Court of Justice North Regional Seminar, National Judicial Institute (“NJI”) (Sudbury, ON Oct. 25, 2023).
184. “Generative AI, Deepfakes, and the Need for Revised Federal Rule of Evidence 901(b),” with Hon. Paul W. Grimm, Meeting of the U.S. Judicial Conference’s Advisory Committee of the Federal Rules of Evidence (Minneapolis, MN Oct. 27, 2023).
185. “Emerging Evidentiary Issues in the Digital Age,” with Yohance Bowden, Julia P. Kuan, and James A. Sharer, Practicing Law Institute (“PLI”) 2023 Trial Evidence Program (New York, NY Oct. 30, 2023).
186. “Nightmare on Review Street: Horror Stories of Managed Review,” with Chris Baker, Mary Mack, and Biordy Meyers,” Purpose Legal and Electronic Discovery Reference Model (“EDRM”) Joint Webinar (Oct. 30, 2023).
187. “Artificial Intelligence: The Basics,” New York State Commercial Division Annual Eileen Branston Institute on Complex Commercial Litigation (New York, NY Nov. 1, 2023).
188. “Evidence Issues Presented by Artificial Intelligence,” with Daniel Capra and Jeremy R. Feinberg, New York State Commercial Division Annual Eileen Branston Institute on Complex Commercial Litigation (New York, NY Nov. 1, 2023).
189. “Achieving Trustworthy AI: Is It Possible Today?,” Academic Keynote at University of Waterloo Fall 2023 Math and Computing Research Discovery Day on Mitigating Risks of AI (Waterloo, ON Nov. 2, 2023).
190. “Artificial Intelligence as Evidence: What Judges and Lawyers Need to Know,” with Hon. Paul W. Grimm, Eastern District of Arkansas Bench and Bar Conference in G. Thomas Eisele (Little Rock, AS

Nov. 3, 2023).

191. “Generative AI and Deepfakes in the Justice System,” U.S. Department of Justice (“DOJ”) Civil Division Training Program (Nov. 7, 2023).
192. “Fundamentals of Artificial Intelligence and Issues of Bias: What Every Law Student Should Know,” Guest Lecture at Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Nov. 9, 2023).
193. “AI and the Legal Profession,” with Ralph Carter, Hon. P. Kevin Castel, Ignatius Grande, Moya Novella, and Hon. James M. Wicks, New York State Bar Association (“NYSBA”) Commercial and Federal (“ComFed”) Litigation Section Program, St. John’s University Law School (New York, NY Nov. 13, 2023).
194. “Emerging Issues with AI and the Law,” Keynote Address, 15th Annual Gibbons E-Discovery Conference (West Orange, NJ Nov. 16, 2023).
195. “The Value of Special Masters in E-Discovery,” with Hon. James C. Francis, IV, Hon. Kristen L. Mix, and Mark S. Sidoti, 15th Annual Gibbons E-Discovery Conference (West Orange, NJ Nov. 16, 2023).
196. “AI-Generated Documents and Admissibility,” with Tam C. Boyar and Hon. David A. Crerar, eDiscovery and Electronic Evidence 2023 Program, Continuing Legal Education Society of British Columbia (“CLEBC”) (Nov. 20, 2023).
197. “AI in the Courtroom for North Dakota Judges,” with Hon. Paul W. Grimm, Fall Conference for the Trial Judges of North Dakota (Bismark, ND Nov. 21, 2023).
198. “Admitting and Challenging AI as Evidence – What are the Frameworks/Considerations for Adjudicators to Accept AI-Generated Evidence,” with Kelly Friedman, Hon. Paul W. Grimm, and Hon. Mohan Sharma, Joint Ontario Bar Association (“OBA”) / Sedona Working Group 7 (“Sedona Canada”) Digital Evidence and eDiscovery (“DEED”) Conference (Toronto, ON Nov. 22, 2023).
199. “Sedona Canada Update,” with Chris Walker, Joint Ontario Bar Association (“OBA”) / Sedona Working Group 7 (“Sedona Canada”) Digital Evidence and eDiscovery (“DEED”) Conference (Toronto, ON Nov. 22, 2023).
200. “Achieving Trustworthy or Responsible AI: Is It Possible?,” Guest Lecture at Cameron Shelley’s Graduate Course on AI and Society, University of Waterloo Centre for Society, Technology and Values (Waterloo, ON Nov. 24, 2023).
201. “AI, Trust, and the Justice System,” Osgoode Professional Development (“OPD”) First Annual Forum on Artificial Intelligence and the Law (Toronto, ON Nov. 28, 2023).
202. “Adverse Responses to Science and Technology in the Academy,” with Trevor Charles, Lai-Tze Fan, and Kelly Grinmod, University of Waterloo International Conference on Antagonism and Intimidation in Academia (Waterloo, ON Nov. 29, 2023).
203. “Incorporating AI Technology Into Your Corporate Legal Practice: Evaluating the Practical and Ethical Implications,” with Paul Gagnon, Al Hounsell, Hersch Perlis, and Sondra Rebenchuk, Module 5 of Canadian Bar Association (“CBA”) Mastering Artificial Intelligence Skills for Corporate Lawyers Series

(Dec. 2, 2023).

204. “Where’s ~~Waldo~~ Generative AI?” with Daniel G. Brown and Hon. Allison Goddard, Joint Electronic Discovery Reference Model (“EDRM”) and Exterro Ninth Annual eDiscovery Day 2023 Webinar (Dec. 7, 2023).
205. “Semi-Annual Case Law Review: December 2023,” with David Horrigan and Ari Kaplan, Association of Certified eDiscovery Specialists (“ACEDS”) Webinar Series (Dec. 8, 2023).
206. “Litigation Transform-AI-tion: Possibilities, Pitfalls, and Responsible Practices,” with Tara Emory and Hon. Xavier Rodriguez, American Law Institute (“ALI”) Continuing Legal Education (“CLE”) Webinar (Dec. 11, 2023).

2022 TALKS

207. “2021 State of AI and Technology Adoption in eDiscovery Study,” with Johannes C. Scholtes and Sarai Schubert, IPRO, ZyLAB, and Association of Certified E-Discovery Specialists (“ACEDS”) Webinar (Jan. 19, 2022).
208. “Progress, Possibility, and Purpose,” with Ari Kaplan, Joy Muraro, Michael Quartararo, and Amy Sellars, Association of Certified E-Discovery Specialists (“ACEDS”) 2022 Roundtable Series (Jan. 20, 2022).
209. “Creative Problem Solving: How to Use Special Masters,” with Merrill Hirsh, Hon. Kristen L. Mix, and Hon. Kaymani (“Kay”) West, Academy of Court-Appointed masters (“ACAM”) Continuing Legal Education (“CLE”) Program for the United States Federal Magistrate Judges Association (“FMJA”) (Jan. 27, 2022).
210. “The Fundamentals of Artificial Intelligence in Under An Hour,” Practice Points Ontario Professional Development (“OPD”) Program at Lenczner Slaght LLP (Jan. 28, 2022).
211. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Co-Sponsored by Northwestern University Pritzker School of Law’s Law and Technology Initiative, AI@NU, High Tech Law Society, and Northwestern Journal of Technology and Intellectual Property (Feb. 3, 2022).
212. “The Admissibility of AI Evidence (in family Law Cases),” with Hon. Paul W. Grimm, Maryland State Bar Association (“MSBA”) Family and Juvenile Law Section (Feb. 7, 2022).
213. “Fundamentals of Artificial Intelligence and Issues of Bias,” Guest Lecture at John Tsiforis’ Computer Technology and Legal Practice Course, at the Maurice A. Deane School of Law of Hofstra University (Feb. 14, 2022).
214. “Technical Matters: Opportunities and Challenges in Using AI in the Practice of Law,” with Medina Abdelkader and Leslie McCallum, University of Alberta Faculty of Law 2022 Digital Law Forum on AI and the Law: Myths & Reality (Mar. 15, 2022).
215. “Fundamentals of Artificial Intelligence and Issues of Bias,” Guest Lecture at Cameron Shelly’s Artificial Intelligence and Society: Impact, Ethics, and Equity Course, at the University of Waterloo (Mar. 16, 2022).
216. “Achieving Trustworthy AI: Inherent Challenges,” National Science and Engineering Research Counsel Collaborative Research and Training Experience (“NSERC CREATE”) Program on Responsible AI (Feb.

18, 2021).

217. Negotiating TAR Protocols,” with Tara Emory, Hon. Allison Goddard, and Mark Noel, Innovative Driven Webinar (Feb. 23, 2022).
218. Fundamentals of Technology-Assisted Review for eDiscovery,” Guest Lecture at Tessa Jacob’s and Robin E. Stewart’s Electronic Discovery Course at University of Missouri-Kansas City School of Law (Feb. 24, 2022).
219. “AI/ML to Classify and Build Data Intelligence: Design and Approaches,” with Priya Keshav, Meru Data Webinar (Mar. 2, 2022).
220. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Continuing Legal Education (“CLE”) Program for the United States Federal Magistrate Judges Association (“FMJA”) (Mar. 3, 2022).
221. “Fundamentals of Artificial Intelligence for Non-Computer Scientists,” Zasio Enterprises, Inc. and Boise Valley Idaho Chapter of the Association of Records Managers and Administrators (“ARMA”) International Virtual Coffee Program (Mar. 10, 2022).
222. “Are Reports of the Document’s Demise Greatly Exaggerated?,” with Thomas C. Gricks III, Alison A Grounds, Jeannine M. Kenney, and Martin Tully, The Sedona Conference Working Group 1 on Electronic Document Retention and Production Virtual Town Hall (Mar. 16, 2022).
223. “Is Tech Broken?,” with Ricardo Baeza-Yates, Vijay Ganesh, and Cameron Shelley, Forum Co-Sponsored by the University of Waterloo u:wait Student Organization and the Waterloo Artificial Intelligence (“AI”) Institute (Mar. 30, 2022).
224. “Artificial Intelligence as Evidence: What Judges Need to Know,” with Hon. Paul W. Grimm, National Judicial College (“NJC”) Webinar (Mar. 31, 2022).
225. “Email Searches—Valid or Not?,” with Adeash A.J. Lakraj, National Employment Lawyers Association (“NELA”) 2022 Spring Seminar on eDiscovery and ESI for the Plaintiffs’ Employment Lawyer (Chicago, IL Apr. 2, 2022).
226. “Fundamentals of Artificial Intelligence,” Developing Young Leaders of Tomorrow Today (“DYLOTT”) Black Diplomats Academy 2022 Learning Lab (Apr. 8, 2022).
227. “JeopTARdy,” with Fatima Brizuela, Christopher Q. King, and Sarah LaFreniere, American Bar Association (“ABA”) Litigation Section 2021 National Class Actions Institute (Austin, TX Apr. 12, 2022).
228. “Predictive Analytics,” Colorado Bar Association Continuing Legal Education (“CBA-CLE”) Program on Advanced E-Discovery (Apr. 14, 2022).
229. “Fundamentals of Technology-Assisted Review (‘TAR’) for eDiscovery,” Guest Lecture at Craig Ball’s Electronic Discovery and Digital Evidence Course at the University of Texas at Austin School of Law (Apr. 20, 2022).
230. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Federal eDiscovery Working Group (“FEDWG”) Stand-Alone Webinar Series (Apr. 26, 2022).

231. “Personal Injury Litigation and AI App Data as Evidence: Ascertaining, Proving, Challenging Admissibility,” with Hon. Paul W. Grimm, Strafford Publications Continuing Legal Education (“CLE”) Program (Apr. 27, 2022).
232. “Everlaw Connect,” with Chuck Kellner, Mary Mack, and Kaylee Walstad, The Electronic Discovery Reference Model (“EDRM”) Illumination Zone Podcast (May 6, 2022).
233. “Discovery and Disclosure Q&A Trivia,” 2022 Discovery and Disclosure Symposium for Government Agencies (Washington, DC May 11, 2022).
234. “Search and Review: Techniques, Protocols, and Validation,” with Jeffrey Fowler and Stan Gibson, Practicing Law Institute (“PLI”) Hot Topics in Electronic Discovery 2022: What the Corporate and Outside Counsel Need to Know Continuing Legal Education (“CLE”) Program (New York, NY May 11, 2022).
235. “eDiscovery Case Law Update: The Beat Goes On,” with Thomas Y. Allman, Phil Favro, David Gaston, Hon. Heather McShane, Anthony Petruzzi, and Hon. Michael L. Robinson, 15th Annual Sedona Conference Institute (“TSCI”): Pre-Trial Practice in a Post-Pandemic World (May 16, 2022).
236. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, National Association of Criminal Defense Lawyers (“NACDL”) Fourth Amendment Center and the Samuelson Law, Technology, and Public Policy Clinic at the University of California Berkeley School of Law Continuing Legal Education (“CLE”) Program on Unlocking the Black Box: Challenging Surveillance Tools and Technologies in Criminal Cases (Chicago, IL May 17, 2022).
237. “Establishing and Protecting (or Challenging) Privilege Claims,” with Jeffrey Harradine, Hon. Andrew J. Peck, Todd Presnell, and Margot Want, 15th Annual Sedona Conference Institute (“TSCI”): Pre-Trial Practice in a Post-Pandemic World (May 18, 2022).
238. “Artificial Intelligence: Predicting the Impact on Litigating and Judging,” with Hon. Paul W. Grimm, Guest Lecture at Hon. David F. Levi’s and Hon. Lee H. Rosenthal’s Judges’ Seminar in the Judicial LLM Program at the Bolsch Judicial Center of Duke Law School (Durham, NC May 20, 2022).
239. “Fireside Chat: Hot Topics in Technology-Assisted Review,” With Chuck Kellner, Keynote Address at Everlaw Connect Powered by the Electronic Discovery Reference Model (“EDRM”) Event (Chicago, IL June 1, 2022).
240. “Artificial Intelligence and the Law,” with Hon. Paul W. Grimm, Tutorial at the 35th Canadian Conference on Artificial Intelligence (“Canadian AI 2022”) (June 2, 2022).
241. “Fundamentals of Artificial Intelligence and Bias: What Every Lawyer Should Know,” National eDiscovery Leadership Institute 2022 (Kansas City, MO June 3, 2022).
242. “Preparing Students to Care About Responsible Technology,” Dean’s Lecture at the University of Waterloo Alumni Weekend (Waterloo, ON June 4, 2022).
243. “Fireside Chat: Hot Topics in Technology-Assisted Review,” with Chuck Kellner, Keynote Address at Everlaw Connect Powered by the Electronic Discovery Reference Model (“EDRM”) Event (New York, NY June 8, 2022).

- 244. “Achieving Trustworthy AI: Inherent Challenges,” Guest Speaker at Robin Cohen’s University of Waterloo Social Implications of Computing Course – Session 1 (Waterloo, ON June 13, 2022).
- 245. “Achieving Trustworthy AI: Inherent Challenges,” Guest Speaker at Robin Cohen’s University of Waterloo Social Implications of Computing Course – Session 2 (Waterloo, ON June 13, 2022).
- 246. “Fireside Chat: Hot Topics in Technology-Assisted Review, with Chuck Kellner, Keynote Address at Everlaw Connect Powered by the Electronic Discovery Reference Model (“EDRM”) Event (Beverly Hills, CA June 15, 2022).
- 247. “Artificial Intelligence as Evidence,” with Robert V. Clark and Hon. Paul W. Grimm, Robert V. Clark’s Everyday Law Podcast at Howard County College (July 11, 2022).
- 248. “Artificial Intelligence and the Justice System: A Primer,” with Gideon Chrisian, Paul-Erik Veel, and Hon. Michael McKelvey, National Judicial Institute (“NJI”) Program on Judging Better, Judging Smarter (St. John’s, Newfoundland and Labrador July 14, 2022).
- 249. “Artificial Intelligence and Analytics and Beyond,” Law Practice Division of the American Bar Association (“ABA”) Best of ABA Techshow Webinar (July 27, 2022).
- 250. “Artificial Intelligence and Bias – Impact on the Courts,” The National Judicial College (“NJC”) Webinar (July 27, 2022).
- 251. “Ripped From the Headlines: The Mystery of the Mar-a-Lago Documents and the Special Master,” with Mary Mack and Hon. Kristen L. Mix, Electronic Discovery Reference Model (“EDRM”) Ripped-From-the-Headlines Flash Webinar Series (Sept. 7, 2022).
- 252. “Persuading Internal Stakeholders to Use eDiscovery technology,” with Scott Cohen, Ari Kaplan, and Jeffrey S. Jacobson, Association of Certified eDiscovery Specialists (“ACEDS”) Advisory Board Webinar Series (Sept. 9, 2022).
- 253. “Emerging Evidentiary Issues,” with Yohance Bowden, Zoe Salzman, and James Sherer, Practicing Law Institute’s (“PLI’s”) Trial Evidence 2022 (Sept. 13, 2022).
- 254. “Overcoming Illegitimate Objections to eDiscovery Based on Assertions of ‘Disproportionality,’” with Kate Dunnington, Kentucky Justice Association (“KJA”) Annual Conference (Cincinnati, OH Sept. 15, 2022).
- 255. “Trends and Predictions: Future of Corporate Discovery,” with Mira Edelman, Cecil Lynn, Sarah Sawvell, and Allison Stanton, Zapproved Eleventh Annual Conference on Preservation Excellence (“PREX 2022”) (Portland, OR Sept. 21, 2022).
- 256. “Humans vs. Machines: Who Wins?” with William (“Bill”) Hamilton, Ari Kaplan, and Alvin Lindsay, Association of Certified eDiscovery Specialists (“ACEDS”) Advisory Board Webinar Series (Sept. 23, 2022).
- 257. “TAR Jeopardy a/k/a JeopTARdy,” with Jason Hartley and Megan E. Jones, Brown Bag Lunch Program for the Judges of the United States District Court for the Southern District of California (Sept. 28, 2022).

- 258. “Fundamentals of Technology-Assisted Review (‘TAR’) for eDiscovery,” Guest Lecture at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s University School of Law (Oct. 3, 2022).
- 259. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, United States Attorney’s Office for the Southern District of Texas Speakers Series (Oct. 6, 2022).
- 260. “Judges Panel,” with Hon. Allison Goddard, Hon. Constantinos (“Deno”) Himonas, Hon. Michael T. Liburdi, and Hon. Xavier Rodriguez, 11th Annual Arizona State University (“ASU”)-Arkfled eDiscovery Law and Technology Conference 2022 (Phoenix, AZ Oct. 12, 2022).
- 261. “Trust But Verify, But How?” with Jeannine Kenney, Hon. Xavier Rodriguez, and Joy Woller, 11th Annual Arizona State University (“ASU”)-Arkfled eDiscovery Law and Technology Conference 2022 (Phoenix, AZ Oct. 12, 2022).
- 262. “A Primer on Race, Law, and Artificial Intelligence for Judicial Educators,” with Timnit Gebru, Hon. Paul W. Grimm, Michael Roosevelt, and Joseph R. Sawyer, National Association of State Judicial Educators (“NASJE”) (New Orleans, LA Oct. 24, 2022).
- 263. “Data Ethics, Data Exchange, and eDiscovery,” with John Barkett, Mary Mack, and Clayton Romera, World Ethical Data Forum (“WEDF”) 2022 (Oct. 27, 2022).
- 264. “Peer into the Future of eDiscovery,” with David R. Cohen, Chuck Kellner, and Hon. Xavier Rodriguez, Everlaw 2022 Summit: Leading Through Change (San Francisco, CA Nov. 3, 2022).
- 265. “‘Technical Competence?’ What the Heck Do You Mean?” with Xavier Rodriguez and Clayton Romera, Everlaw Summit: Leading Through Change (San Francisco, CA Nov. 3, 2022).
- 266. “Fundamentals of Artificial Intelligence and Issues of Bias: What Every Law Student Should Know,” Guest Lecture at Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Nov. 10, 2022).
- 267. “The 411 on Special Masters and Discovery Mediators,” with Hon. Kristen L. Mix, Hon. Andrew J. Peck, and Jay Yelton III, Electronic Discovery Reference Model (“EDRM”) Eighth Annual eDiscovery Day Webinar (Dec. 1, 2022).
- 268. “The Privilege Log Conundrum: Law, Technology, and Strategy,” with Hon. Paul W. Grimm, United States Department of Justice (“DOJ”) Civil Division Continuing Legal Education (“CLE”) Program (Dec. 15, 2022).

2021 TALKS

- 269. “Your Ethical Obligation to be Competent and Stay Current on New Technologies,” with Hon. Ronald J. Hedges, New York State Bar Association (“NYSBA”) Continuing Legal Education (“CLE”) Program (Feb. 3, 2021).
- 270. “Evaluation of Legal Technology for eDiscovery: Lessons Learned and Paths Forward,” Computation and Legal Services Panel with Kevin Ashley, Aloni Cohen, Douglas Downey, Jason Hartline, and Daniel W. Linna Jr., Northwestern Law and Technology Initiative (“LTI”) and Northwestern Journal of Technology and Intellectual Property (“JTIP”) Law + Computation Academic Symposium (Feb. 5, 2021).

- 271. “Hot Topics in Electronic Discovery: Fundamentals of Technology-Assisted Review,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice Course, Maurice A. Deane School of Law at Hofstra University (Feb. 11, 2021).
- 272. “Artificial Intelligence as Evidence,” with Thomas A. Bernard and Hon. Paul W. Grimm, National and Maryland Federal Bar Association (“FBA”) Joint Continuing Legal Education (“CLE”) Program (Feb. 24, 2021).
- 273. “Artificial Intelligence and the Practice of Law,” with Shawwna M. Childress, Nicolas Economou, Gary Marchant, and Tessa K. Jacob, Tenth Annual Arizona State University (“ASU”)-Arkfeld eDiscovery Law and Technology Conference (Mar. 11, 2021).
- 274. “Artificial Intelligence and Analytics in Litigation and Beyond,” Litigation Track, American Bar Association (“ABA”) TECHSHOW 2021 (Mar. 12, 2021).
- 275. “Navigating the Digital Age Together: An Expert Panel Discussion of the United Nations Roadmap for Digital Cooperation,” with Robert Fay, Elvis M. Kenmoe, Frida Misago, and Mark Schaan, United Nations Association in Canada (“UNA-C”) – Balsillie School of International Affairs (“BSIA”) 2021 Speakers Series (Mar. 24, 2021).
- 276. “Using Artificial Intelligence to Find Legal Evidence and COVID-19 Treatments,” Waterloo.AI and Advanced Manufacturing Consortium (“AMC”) Industry Day (Mar. 25, 2021).
- 277. “Fundamentals of Artificial Intelligence and Issues of Bias: What Every Law Student Should Know,” Guest Lecture at Brian Donnelly’s and Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Apr. 1, 2021).
- 278. “Laying the Foundation: Getting Your AI Evidence In,” with Hon. Paul W. Grimm, New York State Bar Association (“NYSBA”) Continuing Legal Education (“CLE”) Program (Apr. 5, 2021).
- 279. “Ethical Implications of Working Remotely and Online Collaboration,” with Shawndra G. Jones, Scott L. Malouf, and Sari Montgomery, New York State Bar Association (“NYSBA”) Continuing Legal Education (“CLE”) Program on Technology and Legal Ethics: What Every Lawyer Should Know (Apr. 14, 2021).
- 280. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Maryland State Bar Association (“MSBA”) 2021 Legal Summit Series and Annual Meeting (Apr. 20, 2021).
- 281. “Fundamentals of Technology-Assisted Review for eDiscovery,” Trial Guides Webinar (Apr. 27, 2021).
- 282. “Unexpected Challenges on the Road to Quantitative Empirical Evaluation of Legal Technology,” with Cary Colgianese, Joan Feigenbaum, and J.J. Prescott, Northwestern University / Toyota Technological Institute at Chicago / University of Chicago Institute for Data, Econometrics, Algorithms, and Learning (“IDEAL”) Special Quarter on Data Science and Law Workshop on Evaluation and Accountability: Technologies for Law (Apr. 30, 2021).
- 283. “The Ethics of Automated Warfare and Artificial Intelligence,” with Robert C. Engen, Matthew Kellett, and Bessma Momani, University of Waterloo Defense and Security Foresight Group, University of Waterloo AI (“Artificial Intelligence”) Institute, and North American and Arctic and Defense and Security Network (“NAADSN”) Webinar Series (May 4, 2021).

- 284. “Search and Review: Techniques, Protocols, and the Use of Neutrals in E-Discovery Practice,” with Hon. James C. Francis IV and Stanley M. Gibson, Hot Topics in Electronic Discovery 2021: What Corporate and Outside Counsel Need to Know, Practicing Law Institute (“PLI”) (May 5, 2021).
- 285. “Artificial Intelligence and the Future of Lawyering,” with Anthony E. Davis, Sarah Jo Hamilton, James B. Koback, Jr., Joseph Samberra, and Katherine Strandburg, New York County Lawyers Association (“NYCLA”) Continuing Legal Education (“CLE”) Institute Webinar (May 12, 2021).
- 286. “Welcome to the Machine: Technology-Assisted Review (‘TAR’) at the Library of Virginia, with Roger Christman and Gordon V. Cormack, Best Practices Exchange 2021 (“BPE2021”) / Council of State Archives (“CoSA”) Annual “Unconference” on Adopting and Evolving Digital Initiatives (May 19, 2021).
- 287. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm and Michael Smoyer, Keynote Address at the Digital Government Institute (“DGI”) Virtual eDiscovery Conference (May 20, 2021).
- 288. “Lessons in Leadership,” Developing Young Leaders of Tomorrow Today (“DYLOTT”) Black Diplomats Academy 2021 (May 30, 2021).
- 289. “Using Machine learning to Find Relevant Documents in Electronic Discovery and Other Fields,” Symposium on Artificial Intelligence and Law (“SAIL”) 2021 (June 3, 2021).
- 290. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, National Association of Criminal Defense Lawyers (“NACDL”) / Cardozo National Forensics College (“NFC”) 2021 Digital Week Talk, offered in conjunction with the Administrative Office of the United States Courts Defender Services Training Division (June 9, 2021).
- 291. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Keynote at the 2021 Kansas Bar Association (“KBA”) Mid-Year Continuing Legal Education (“CLE”) Meeting (June 11, 2021).
- 292. “Imagining Law and the Legal Profession in the Year 2030: How AI is Changing Legal Profession,” Breakout Room and Report Back, at the 2d International Workshop on AI and Intelligent Assistance for Legal Professionals in the Digital Workplace (“LegalAIIA2021”), in connection with the 18th International Conference on Artificial Intelligence and the Law (“ICAIL 2021”) (June 21, 2021).
- 293. “June Conversations,” with Mary Mack, Rob Robinson, and Kaylee Walstad, eDiscovery Lagniappe in conjunction with ComplexDiscovery on Clubhouse (June 24, 2021).
- 294. “A Fun Fact About Chapter 13: Vetting and Validation of AI-Enabled Tools for Electronic Discovery,” Edmond Litigating AI Virtual Book Launch Party (June 24, 2021).
- 295. “Artificial Intelligence (‘AI’): What Judges Have to Know,” with David Engstrom, Nicolas Economou, and Hon. Katherine Forrest, National Judicial College Webinar for Judges of the Ukraine (June 30, 2021).
- 296. “The Ethics of AI in the Legal Profession,” with Tess Blair, Legalweek(year) Virtual Series 5, Legal Automation Educational Track (July 14, 2021).
- 297. “Transitions, Transformations, and Triumphs: The Educational Perspective,” with William (“Bill”) Hamilton, Ari Kaplan, Michael Quartararo, and George Socha, Association of Certified E-Discovery Specialists (“ACEDS”) Roundtable (June 20, 2021).

- 298. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Association of Certified E-Discovery Specialists (“ACEDS”) (Aug. 10, 2021).
- 299. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, National Advocacy Center (“NAC”) (Aug. 11, 2021).
- 300. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Young Lawyers Section of the Maryland State Bar Association (“MSBA”) (Aug. 25, 2021).
- 301. “A Brief Introduction to Artificial Intelligence,” National eDiscovery leadership Institute 2021 (“NeLI 2021”) (Sept. 13, 2021).
- 302. “Emerging Evidentiary Issues in the Digital Age,” with Yohance Bowden, Zoe Salzman, and James Sherer, Practising Law Institute’s (“PLI’s”) Trial Evidence 2021 (Sept. 14, 2021).
- 303. “Fundamentals of Technology-Assisted Review (“TAR”) for eDiscovery,” InforGov (“IG”) World 2021 Conference (Sept. 16, 2021).
- 304. “Processing and Early Case Analysis: Best Practices for Culling, Analysis, and Processing,” with Chuck Rothman, Osgoode Professional Development Certificate Program in E-Discovery, Information Governance, and Privacy (Sept. 20, 2021).
- 305. “Analysis of Data,” Osgoode Professional Development Certificate Program in E-Discovery, Information Governance, and Privacy (Sept. 24, 2021).
- 306. “Judicial Panel,” with Hon. Bernice Bouie Donald, Hon. Ronald J. Hedges, Hon. Frank Maas, Hon. Kristen L. Mix, Hon. Andrew J. Peck, and Hon. Xavier Rodriguez, Zapproved Preservation Excellence (“PREX”) 2021 Conference on Driving Innovation (Sept. 28, 2021).
- 307. “Understanding AI and Machine Learning: Dos and Don’ts for the Innovative Legal Department,” with Aaron Bath, David R. Cohen, and Jonathan Redgrave, Zapproved Preservation Excellence (“PREX”) 2021 Conference on Driving Innovation (Sept. 28, 2021).
- 308. “Working with Special Masters,” Continuing Legal Education (“CLE”) Program for the United States Department of Justice (“DOJ”) Civil Division (Sept. 30, 2021).
- 309. “Fundamentals of Technology-Assisted Review (“TAR”) for eDiscovery,” Guest Lecture at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s University School of Law (Sept. 30, 2021).
- 310. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Memphis / Mid-South Federal Bar Association (“FBA”) Annual Seminar (Oct. 22, 2021).
- 311. “A Brief Introduction to Artificial Intelligence,” Ontario Bar Association (“OBA”) Digital Evidence and E-Discovery (“DEED”) Working Group (Oct. 27, 2021).
- 312. “The Path of Least Resistance: From Raw Data to Admitted Exhibit,” with Hon. Paul W. Grimm, Continuing Legal Education (“CLE”) Program for the United States Department of Justice (“DOJ”) Civil Division (Oct. 28, 2021).
- 313. “A Chat with Tom O’Connor and Rachy Messing,” eDiscovery Channel on YouTube (Nov. 8, 2021).

- 314. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Central and Eastern European Law Initiative (“CEELI”) Institute / National Judicial Academy (“NJA”) of India / United States Federal Judicial Center (“FJC”) Joint Judicial Education Programs on Cybercrimes and Human Trafficking in the Courts, for the Judges of India (Nov. 8, 2021).
- 315. “Managing Complexity in Discovery in Mergers and Acquisitions,” with Andrew Boyer, Carolyn Anger and Alysha Knight-Manji, Canadian Legal Innovation Forum (“CANLIF”) Fall 2021 Webinar Series (Nov. 9, 2021).
- 316. “Artificial Intelligence and Litigation,” with Daniel W. Linna, Jr., Harry Surden, and Rebecca Wexler, University of Colorado Boulder Law School Silicon Flatirons Conference on The State of the Art of Artificial Intelligence in the Practice of Law (Nov. 9, 2021).
- 317. “Artificial Intelligence as Evidence,” with Hon. Paul W. Grimm, Federal eDiscovery Working Group (“FEDWG”) Annual Virtual Conference (Nov. 10, 2021).
- 318. “Artificial Intelligence as Evidence,” with Seth Katsuya Endo, Hon. Paul W. Grimm, William (“Bill”) F. Hamilton, and Rebecca Wexler, University of Florida Levin College of Law (Nov. 17, 2021).
- 319. “Achieving Trustworthy AI: Inherent Challenges,” Roundtable on Execution: Artificial Intelligence and Challenges, Vector Institute for Artificial Intelligence Trustworthy AI Project (Nov. 18, 2021).
- 320. “Artificial Intelligence and Bias,” with Hon. Katherine Forrest, and James B. Kobak, Jr., New York County Lawyers Association (“NYCLA”) Bridge the Gap Continuing Legal Education (“CLE”) Institute Program (Nov. 19, 2021).
- 321. “Search and Review Strategies for Document Collections of All Sizes,” with Ryder Gililand, Gordon Lee, and Debbie McGlynn, 2021 Digital Evidence and eDiscovery Institute, Co-Sponsored by the Ontario Bar Association (“OBA”), The Law Society of Ontario, and The Advocates’ Society (Nov. 22, 2021).
- 322. “Negotiating ESI Protocols,” Continuing Legal Education (“CLE”) Program for the United States Department of Justice (“DOJ”) Civil Division (Nov. 30, 2021).
- 323. “Artificial Intelligence as Evidence,” with Gordon V. Cormack and Hon. Paul W. Grimm, Electronic Discovery Reference Model (“EDRM”) Continuing Legal Education (“CLE”) Program in Connection with eDiscovery Day 2021 (Dec. 1, 2021).
- 324. “Fundamentals of Artificial Intelligence and Issues of Bias: What Every Law Student Should Know,” Guest Lecture at Brian Donnelly’s and Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Dec. 2, 2021).
- 325. “Judges’ Panel,” with Hon. Willie J. Epps, Jr., Hon. Iain Johnston, Hon. Tanya R. Kennedy, and Hon. Xavier Rodriguez, 2021 Deloitte Federal Discovery’s 2021 Electronic Discovery Symposium for Government Agencies (Dec. 7, 2021).
- 326. “A Brief Overview of Special Masters,” with David M. Tenner, Colorado Bar Association Continuing Legal Education (“CBA–CLE”) Discovery Practicum on Better Discovery: Taking a More Targeted Approach (Dec. 8, 2021).
- 327. “International eDiscovery – Part I,” with Daniel B. Garrie, Rachi Messing, and Daniel J. Nichols, Thompson Reuters (WestlawLegalEd), Global Cybersecurity Institute, and Lexepoint Inc. Continuing

Legal Education (“CLE”) Webinar (Dec. 20, 2021).

328. “International eDiscovery – Part II,” with Daniel B. Garrie, Rachi Messing, and Daniel J. Nichols, Thompson Reuters (WestlawLegalEd), Global Cybersecurity Institute, and Lexeprint Inc. Continuing Legal Education (“CLE”) Webinar (Dec. 20, 2021).

2020 TALKS

329. “The Mathematics of eDiscovery,” with Matthew Mahon and Michael Quartararo, Association of Certified eDiscovery Specialists (“ACEDS”) Webinar (Jan. 28, 2020).
330. “Emerging Technologies in Litigation,” with Hon. Melissa Crane, Hon. Katherine Forrest, Gail Gottehrer, and Kan Nawaday, Commercial and Federal Litigation Section Meeting at the New York State Bar Association (“NYSBA”) Annual Meeting (New York, NY Jan. 29, 2020).
331. “An Introduction to Technology-Assisted Review for eDiscovery,” Guest Lecture at Tessa Jacobs’ and Robin Stewart’s Electronic Discovery Course at the University of Missouri–Kansas City Law School (Feb 18, 2019).
332. “Artificial Intelligence (‘AI’) to Support the Practice of law,” with Hon. David Gerston, Phillip A. Gold, Hon. Hon. Ronald J. Hedges, and Jason Kairilla, Artificial Intelligence in Courtroom Practice: What Lawyers and Judges Need to Know, The National Judicial College, American Board of Trial Advocates (“ABOTA”) – Miami Chapter, Dade County Bar Association, and Miami Dade Trial Lawyers Association (Miami, FL Feb. 27, 2020).
333. “Judges and Artificial Intelligence (‘AI’), with Hon. Jennifer Bailey, Hon. David Gerston, Hon. Ronald J. Hedges, Hon. Miguel de la O, Richard DeNapoli, and Hon. Daryl Trawick Artificial Intelligence in Courtroom Practice: What Lawyers and Judges Need to Know, The National Judicial College, American Board of Trial Advocates (“ABOTA”) – Miami Chapter, Dade County Bar Association, and Miami Dade Trial Lawyers Association (Miami, FL Feb. 27, 2020).
334. “Bias in Data-Driven Decision-Making,” Privacy, Infrastructures, Policy (“PIP”) Conference, University of Waterloo (Waterloo, ON Feb. 28, 2020).
335. “Lessons in Leadership: Innovating When Innovation Isn’t Welcome,” Keynote at the Women in Data Science Conference 2020 (“WiDS@Ottawa”) (Ottawa, ON Mar. 2, 2019).
336. “Ethics, Artificial Intelligence, and Society,” with Fawn Annan, Karen Eltis, Sarah Tatsis, and Carolyn Watters,” Panel at the Women in Data Science Conference 2020 (“WiDS@Ottawa”) (Ottawa, ON Mar. 2, 2019).
337. “eDiscovery Special Masters: The Good, the Bad, and the Ugly,” with Jeannine Kenney and Hon. Kristen L. Mix, Ninth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference (Phoenix, AZ Mar. 11, 2019).
338. “ESI Search Strategies: Determining What’s Right for Your Case,” with Tessa Jacob and Anne Kershaw, Ninth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference (Phoenix, AZ Mar. 12, 2019).

- 339. “Hot Topics in Electronic Discovery: Fundamentals of Technology-Assisted Review,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice Course, Maurice A. Deane School of Law at Hofstra University (Mar. 19, 2020).
- 340. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Craig Ball’s Electronic Discovery and Digital Evidence Course at the University of Texas at Austin School of Law (Apr. 6, 2020).
- 341. “Artificial Intelligence and the Law: Real Benefits and Challenges,” Guest Lecture at Brian Donnelly’s and Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Apr. 16, 2020).
- 342. “Remote Teaching and Assessment,” with Carmen Bruni, Craig Kaplan, Ian McKillop, Naomi Nishimura, and Dave Tompkins, David R. Cheriton School of Computer Science, University of Waterloo (Apr. 29, 2020).
- 343. “Rebooting: Security and Data Privacy Considerations,” with Deborah Evans, Plinio Morita, Michele Mosca, Michael Parker, and Douglas Stebila, The Gateway for Enterprises to Discover Innovation (“GEDI”) at the University of Waterloo Post-COVID-19 Reboot Panel Series (June 2, 2020).
- 344. “Hot Topics in Electronic Discovery: Fundamentals of Technology-Assisted Review,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice Course, Maurice A. Deane School of Law at Hofstra University (June 9, 2020).
- 345. “The ACEDS Summer Roundtable Series: Transitions, Transformations, and Triumphs in 2020,” with Ari Kaplan, Patricia LeBel-Lasse, Joy Murao, Michael Quartararo, and George Socha Association of eDiscovery Specialists (“ACEDS”) Webinar (July 15, 2020).
- 346. “The Battle Against COVID-19: How eDiscovery Software is Playing a Role,” with Sharon D. Nelson and John W. Simek, 117th Episode of Digital Detectives Podcast on Legal Talk Network (July 15, 2020).
- 347. “Diversity and Inclusion in Legal Tech Education,” Virtual SubTech 2020 BIG IDEA Talk (July 16, 2020).
- 348. “TAR Unstuck: Everything You Ever Wanted to Know About Technology-Assisted Review,” Georgetown Law Executive and Continuing Legal Education (“CLE”) Law and Technology Forum (July 22, 2020).
- 349. “Fundamentals of Artificial Intelligence and Issues of Bias,” Georgetown Law Executive and Continuing Legal Education (“CLE”) Law and Technology Forum (July 22, 2020).
- 350. “New Technologies: How Attorneys and Their Clients Might Evaluate New Technologies to Decide Whether to Adopt,” with Sarah Gold and Hon. Ronald J. Hedges, New York State Bar Association (“NYSBA”) Summer Webinar Series (July 23, 2020).
- 351. “Fundamentals of Artificial Intelligence and Issues of Bias,” Association of eDiscovery Specialists (“ACEDS”) Detroit Chapter Webinar (Aug. 4, 2020).
- 352. “Welcome to the Machine: AI in the Archives,” with Sharmila Bhatia, Roger Christman, Gordon V. Cormack Cal Lee, and Brent M. West, 2020 Joint Meeting of the Council of State Archivists (“CpSA”) /Society of American Archivists (“SAA”) Annual Meeting (Aug. 7, 2020).

- 353. “Fundamentals of Artificial Intelligence and Issues of Bias,” Continuing Legal Education (“CLE”) Program for the U.S. Department of Justice (“DOJ”) Civil Division (Aug. 19, 2020).
- 354. “Ethics of Artificial Intelligence in Medical Research,” with Ran Goldman, The Ethical Research Podcast (Aug. 21, 2020).
- 355. “Special Masters in Litigation,” with Hon. Frank Maas, Hon. Kristen L. Mix, and Hon. Ira Warshawsky, Zapproved Preservation Excellence (“PREX”) Summit Series (Aug. 25, 2020).
- 356. “Artificial Intelligence and Algorithms,” Guest Lecture at Mark Berman’s Technology and the Legal Profession at Albany Law School (Sept. 1, 2020).
- 357. “Fundamentals of Artificial Intelligence and Issues of Bias, New York State Bar Association (“NYSBA”) Committee on Technology and the Legal Profession Continuing Legal Education (“CLE”) Program (Sept. 10, 2020).
- 358. “TAR Talk Episode 15: Legal TAR Algorithm Helps Canadian Health Authorities Track Coronavirus Research,” with Thomas C. Gricks, III, Jeremy Pickens, and John Tredennick. Electronic Discovery Reference Model (“EDRM”) Global Podcast Network (Sept. 18, 2020).
- 359. “Good Housekeeping Seal of Approval for AI: Evaluating Artificial Intelligence and Other Technology for Law,” with Daniel W. Linna Jr., Law Technology Now Podcast (Sept. 23, 2020).
- 360. “Illumination Zone,” with Gordon V. Cormack, Mary Mack, and Kaylee Frangos Walstad, Electronic Discovery Reference Model (“EDRM”) Global Podcast Network (Sept. 25, 2020).
- 361. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s University School of Law (Sept. 29, 2020).
- 362. “Checklist for Choosing an eDiscovery Solution,” with Carolyn E. Anger, James A. Gill, and Michael Quartararo, Ipro Tech and Association of Certified eDiscovery Specialists (“ACEDS”) Voices of eDiscovery Webinar (Sept. 30, 2020).
- 363. “Underappreciated Lawyering Skills,” with Hon. Michael E. Hegarty, Hon. Kristen L. Mix, and Gina Rodriguez, Faculty of Federal Advocates (“FFA”) Continuing Legal Education (“CLE”) Program (Sept. 30, 2020).
- 364. “Evaluating Legal Services and legal Technology for Effectiveness, Quality, and Value,” Guest Lecture at Daniel W. Linna Jr.’s AI and Legal Reasoning Course at Northwestern Pritzker School of Law (Oct. 13, 2020).
- 365. “Trustworthy AI: Security, Privacy, and Ethics,” with N. Asokan, Ro Cammorata, Vijay Ganesh, Xi He, and Yaoliang Yu, University of Waterloo Cybersecurity and Privacy Institute (“CPI”) Cybersecurity Month Event (Oct. 15, 2020).
- 366. “The Path From Here to There,” Presentation to the J.W. Graham Trust Advisory Committee Meeting (Oct. 20, 2020).
- 367. “eDiscovery and Technology-Assisted Review in the Civil Context,” Guest Lecture at Mark Berman’s Technology and the Legal Profession Course at Albany Law School (Oct. 20, 2020).

- 368. “Fundamentals of Artificial Intelligence and Issues of Bias: What Every Law Students Should Know,” Future of Law Lab at the University of Toronto Faculty of Law (Oct. 28, 2020).
- 369. “Basics of Electronically Stored Information (“ESI”): Part I,” Training Program for the U.S. Civilian Board of Contract Appeals on Behalf of the National Judicial College (“NJC”) (Nov. 2, 2020).
- 370. “Basics of Electronically Stored Information (“ESI”): Part II,” Training Program for the U.S. Civilian Board of Contract Appeals Behalf of the National Judicial College (“NJC”) (Nov. 2, 2020).
- 371. “Judicial Discovery Issues: Part I,” with Hon. Daniel J. Crothers, Training Program for the U.S. Civilian Board of Contract Appeals Behalf of the National Judicial College (“NJC”) (Nov. 2, 2020).
- 372. “Judicial Discovery Issues: Part II,” with Hon. Daniel J. Crothers, Training Program for the U.S. Civilian Board of Contract Appeals Behalf of the National Judicial College (“NJC”) (Nov. 2, 2020).
- 373. “Workshop 1: Statistics and Evaluating Technology-Assisted Review (“TAR”) Outcomes,” Continuing Legal Education (“CLE”) Program for the U.S. Department of Justice (“DOJ”) Civil Division (Nov. 4, 2020).
- 374. “Workshop 2: Negotiating Technology-Assisted Review (“TAR”) Protocols and Validation Steps,” Continuing Legal Education (“CLE”) Program for the U.S. Department of Justice (“DOJ”) Civil Division (Nov. 4, 2020).
- 375. “Search of Electronically Stored Information (“ESI”),” Training Program for the U.S. Civilian Board of Contract Appeals on Behalf of the National Judicial College (“NJC”) (Nov. 9, 2020).
- 376. “Social Media Issues,” with Mark Lanterman, Training Program for the U.S. Civil Board of Contract Appeals on Behalf of the National Judicial College (“NJC”) (Nov. 9, 2020).
- 377. “Proportionality and Cost-Shifting,” with Mark Lanterman, Training Program for the U.S. Civilian Board of Contract Appeals on Behalf of the National Judicial College (“NJC”) (Nov. 9, 2020).
- 378. “Spoliation and Sanctions,” with Mark Lanterman, Training Program for the U.S. Civilian Board of Contract Appeals on Behalf of the National Judicial College (“NJC”) (Nov. 9, 2020).
- 379. “The Path From Here to There,” Keynote Address at the University of Waterloo Data Science Club’s Lightning Talks: Exploring Research in Data Science Program (Nov. 9, 2020).
- 380. “Off the Beaten Path: Data Analytics for COVID-19 and Beyond,” with Jason R. Baron, Ricardo Baeza-Yates and Robert Gebeloff, Georgetown Law 2020 Global Advanced eDiscovery Institute (Nov. 12, 2020).
- 381. “eDiscovery: Drivers, Trends, and Technology, with Carolyn E. Anger, Andrew Boywer, and Jessica Lockett, Canadian Legal Innovation Forum Webinar Series Fall/Winter 2020/2021 (Nov. 12, 2020).
- 382. “Artificial Intelligence in Civil and Criminal Discovery: Lessons From Science, Legal Norms, and Real-World Practice,” with Hon. Paul W. Grimm, Bruce Hedin, and Yannick Meneceur, The Athens Roundtable on Artificial Intelligence and the Rule of Law (Nov. 16, 2020).
- 383. “Pajamas and Professionalism: Standards and Ethics for New Surroundings, New Tech, and New Social Media Uses,” with Scott L. Malouf and Sari Montgomery, New York State Bar Association (“NYSBA”)

2020 Virtual Tech Summit on Virtual Lawyering: A Practical Guide (Nov. 18, 2020).

384. “Fundamentals of Artificial Intelligence and Issues of Bias,” Guest Lecture at Brian Donnelly’s and Conrad A. Johnson’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Nov. 19, 2020).
385. “The ACEDS Fall Roundtable Series: Transitions, Transformations, and Triumphs in 2020,” with Julie K. Brown, David Horrigan, Ari Kaplan, and Michael Quartararo, Association of eDiscovery Specialists (“ACEDS”) Webinar (Nov. 23, 2020).
386. “Technology Accelerators,” with Matt Maslow and Chuck Rothman, 2020 Digital Evidence and eDiscovery Institute, Co-Sponsored by the Ontario Bar Association (“OBA”) Digital Evidence and eDiscovery Working Group and Sedona Canada (Nov. 25, 2020).
387. “Guest Interview,” Daniel W. Linna, Jr.’s Digital Transformation of Legal Services: From Continuous Improvement to Disruption Course at Northwestern Pritzker School of Law (Dec. 17, 2020).

2019 TALKS

388. “The Great Debate,” with Jake Heller, Thomas J. Hamilton, Lee J. Tiedrich, and Richard Tromans, ALM Media LLC Legalweek Workshop A – AI Bootcamp 2.0 (New York, NY Jan. 28, 2019).
389. “The Use of Special Masters and E-Discovery Mediators in Connection with Court Litigation,” with Mark Berman, Jeremy Feinberg, Hon. Shirley Werner Kornreich, and Hon. Frank Maas, Joint New York State Bar Association (“NYSBA”) /JAMS Continuing Legal Education (“CLE”) Program on Resolving E-Discovery Disputes Efficiently in Arbitration and in Court (New York, NY Jan. 28, 2019).
390. “Access to Justice: Substantial Challenges and How You, the Law, and Technology Can Help,” with David Horrigan, Zabrina Jenkins, Hon. Tanya R. Kennedy, Hon. Xavier Rodriguez, and James Sandman, Data Discovery 2019: Challenges for Business and Society—With Answers from Law and Technology Track at Legaltech 2019 (New York, NY Jan. 30, 2019).
391. “AI Fundamentals: Impact on the Legal Profession,” Guest Lecture at Mark A. Berman and Joe Rosenberg’s Course on Technology and the Law: No Expertise Required, City University of New York (“CUNY”) School of Law (Long Island City, NY Jan. 30, 2019).
392. “Artificial Intelligence and Law: Genuine Benefits and Challenges,” Guest Lecture at Karen Eltis’ University of Ottawa Faculty of Law Internet/Cyber Law Course (Ottawa, ON Feb. 7, 2018).
393. “Artificial Intelligence and Law: Real Benefits and Challenges: Session I,” Annual Toronto Youth STEM and Innovation (“TYSI”) Conference (Toronto Feb. 19, 2019).
394. “Artificial Intelligence and Law: Real Benefits and Challenges: Session II,” Annual Toronto Youth STEM and Innovation (“TYSI”) Conference (Toronto Feb. 19, 2019).
395. “AI Update: What Works, What Doesn’t, Questions to Ask, and Thorny Legal Issues,” with William (“Bill”) Kellerman and Gary Merchant, Eighth Annual Arizona State University (“ASU”) –Arkfeld eDiscovery Conference (Phoenix, AZ Mar. 6 – 8, 2019).

396. “Artificial Intelligence in Law: Real Benefits and Challenges,” Keynote Address at Eighth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery Conference (Phoenix, AZ Mar. 6 – 8, 2019).
397. “TAR Unstuck: Choosing the Right Tool, Using It Wisely, and Negotiating an Effective TAR Protocol,” with Tessa Jacobs and Jeannine M. Kenney, Eighth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery Conference (Phoenix, AZ Mar. 6 – 8, 2019).
398. “An Introduction to Technology-Assisted Review for eDiscovery,” Guest Lecture at Tessa Jacobs’ Electronic Discovery Course at the University of Missouri–Kansas City Law School (Mar. 12, 2019).
399. “Promoting and Increasing Adoption of TAR in Your Organization,” with Michallynn Demiter and Jeff Gilles, International Legal Technology Association (“ILTA”) Webinar (Mar. 21, 2019).
400. “Understanding Automated Decision-Making for Lawyers: Code and Data,” Opening Presentation at The Citizen Lab, Law Commission of Ontario, and International Human Rights Forum on Automated Decision-Making in the Criminal Justice System (Toronto, ON Mar. 22, 2019).
401. “Hot Topics in Electronic Discovery,” Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice at the Maurice A. Deane School of Law at Hofstra University (Mar. 25, 2019).
402. “eDiscovery and Technology-Assisted Review,” with Hon. James C. Francis, IV, Guest Lecture at Mark A. Berman and Joe Rosenberg’s Course on Technology and the Law: No Expertise Required, City University School of Law (Long Island City, NY Mar. 27, 2019).
403. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Craig Ball’s Electronic Discovery and Digital Evidence Course at the University of Texas at Austin School of Law (Apr. 1, 2019).
404. “Lessons in Leadership: Leading the Way on Rocky Terrain,” Plenary Session at the New York Information Technology (“IT”) Leadership Academy (Albany, NY Apr. 4, 2019).
405. “Artificial Intelligence and the Law: Real Benefits and Challenges,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Apr. 11, 2019).
406. “The Legal and Ethical Implications of Artificial Intelligence,” Plenary Session at the Federal Judicial Center (“FJC”) Magistrate Judges’ National Workshop No. 1 (Miami, FL Apr. 16, 2019).
407. “Helping the Medicine Go Down: Teaching Across C.P. Snow’s Two Cultures, with Scott Campbell, Doreen Fraser, and Paul Heidbrecht, University of Waterloo Teaching and Learning Conference (Waterloo, ON May 2, 2019).
408. “A Candid Conversation with U.S. Magistrate Judge Kristen L. Mix,” at Deloitte Federal Discovery’s 2019 Electronic Discovery Symposium for Government Agencies (Washington, DC May 7, 2019).
409. “Machine Learning in Operations: Lessons Learned From the TAR Journey,” with Ian Wilson, Corporate Legal Operations Consortium (“CLOC”) 2019 Vegas Fourth Annual Institute (Las Vegas, NV May 14 – 16, 2019).
410. “Fundamentals of Technology-Assisted Review (‘TAR’),” Legal Technology Education Society of Alberta (“LESA”) 2019 Legal Technology Conference (Edmonton, Alberta May 24, 2019).

- 411. “Proportionality in eDiscovery – From Mobile Devices to TAR: Exploring Proportionality From Both Legal and Technological, with Woods Abbott, Jonathan Sablone, and George Socha, Second Annual New England Legal Technology Professionals (“NETLP”) Connect Conference (Boston, MA May 30, 2019).
- 412. “Academy Overview,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 2, 2019).
- 413. “History of eDiscovery and the New Rules,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 2, 2019).
- 414. “Coaches Corner: Meet and Confer Strategies,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 3, 2019).
- 415. “Law of Collections and Forms of Production I,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 4, 2019).
- 416. “Law of Collections and Forms of Production II,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 4, 2019).
- 417. “Fundamentals of Technology-Assisted Review (“TAR”) for eDiscovery,” Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 5, 2019).
- 418. “TAR Exercises,” with Gordon V. Cormack, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 5, 2019).
- 419. “The Courts and TAR: Where Are They and Where They Are Going,” with Craig Ball, Hon. John M. Facciola, and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 5, 2019).
- 420. “Mock 30(b)(6) IT Witness Depositions and Discussion,” with Gordon V. Cormack, Hon. John M. Facciola, Tom O’Connor, and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 6, 2019).
- 421. “Federal Rule of Evidence 502,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 6, 2019).
- 422. “Privacy and eDiscovery Process From a National and International Perspective,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 6, 2019).
- 423. “Ethics,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 6, 2019).
- 424. “Mock 26(f) Conference,” with Hon. Paul W. Grimm, Georgetown University Law Center eDiscovery Training Academy 2019 (Washington, DC June 7, 2019).
- 425. “Celebrating Women in Computer Science: An Interview with Turing Award Laureates Shafi Goldwasser and Barbara Liskov,” University of Waterloo Turing Symposium and Celebration of Women

in Computer Science (Waterloo, ON June 13, 2019).

426. “Wo(man) and Machine – Who Makes the Decisions and Why,” with Rozita Dara, Sheldon Fernandez, Lynda Partner, Neil Randall, and Sarah Shortreed, Waterloo Regional Chapter of Women in Communications and Technology (“WCT”) (June 25, 2019). [5:30 – 8:30 PM; Accelerator Centre on Hagey Boulevard, West Entrance, 1st Floor]
427. “Fundamentals of Artificial Intelligence – Algorithms and Oppression,” Guest Lecture at Mark A. Berman’s and Deborah S. Kerr’s Course on Emerging Technology and the Practice of Law, Syracuse Law School (Sept. 12, 2019).
428. “Leadership: The Role of Special Masters in eDiscovery,” with Craig Ball, Jonathan Redgrave, and Hon. Shira A. Scheindlin, Zapproved’s Preservation Excellence (“PREX”) 2019 Conference (Chicago, IL Sept. 17 – 19, 2019).
429. “Leadership: Judicial Forum – Lightning Round with the Judges,” with Hon. Ronal J. Hedges, Hon. Elizabeth Laporte, Hon. Frank Maas, Hon. Andrew J. Peck, and Hon. Xavier Rodriguez, Zapproved’s Preservation Excellence (“PREX”) 2019 Conference (Chicago, IL Sept. 17 – 19, 2019).
430. “Artificial Intelligence and the Law: Real Benefits and Challenges,” Keynote Address at Fourth Annual Association of Certified eDiscovery Specialists (“ACEDS”) Detroit Symposium – Midwest eDiscovery Conference (Detroit, MI Sept. 27, 2019).
431. “Best Practices and Strategies for Technology-Assisted Review (“TAR”),” U.S. Department of Justice (“DOJ”) Civil Division (Washington, DC Oct. 16, 2019).
432. “eDiscovery and Technology-Assisted Review in Civil and Criminal Proceedings,” with Emma M. Greenwood, Guest Lecture at Mark A. Berman’s and Deborah S. Kerr’s Course on Emerging Technology and the Practice of Law, Syracuse Law School (Oct. 17, 2019).
433. “Teaching Across Two Cultures: Bridging the Gap Between Computer Science and Law,” Lightning Talk at University of Waterloo Summit on Responsible Innovation and Technology (Waterloo, ON Oct. 23, 2019).
434. “Artificial Intelligence and the Law: Real Benefits and Challenges,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Oct. 24, 2019).
435. “Plenary 1: Forward to the Future: Legal and Ethical Implications of Artificial Intelligence,” Southern District of Texas Bench and Bar Conference (Houston, TX Oct. 29, 2019).
436. “Civil Breakout 1: Drilling Down – ESI Issues That Impact Civil Practice,” with Zenobia Harris Bivens, Southern District of Texas Bench and Bar Conference (Houston, TX Oct. 29, 2019).
437. “Lessons in Leadership: Leading the Way on Rocky Terrain,” ACM Canadian Celebration of Women in Computing (“CAN-CWIC 2019”) (Mississauga, ON Nov. 9, 2019).
438. “Introduction and Overview: What is Artificial Intelligence / Machine Learning / Automated Decision-Making, and Why Should We Care?,” Law Society of Ontario 2019 Special Lectures Program (Toronto, ON Nov. 21, 2019).

439. “Lessons in Leadership: Leading the Way on Rocky Terrain,” Keynote Address at Waterloo WatITis 2019 Conference (Waterloo, ON Dec. 4, 2019).

2018 TALKS

440. “An Introduction to Electronic Discovery,” Topics in Electronic Discovery, Georgetown University Law Center Spring 2018 Week One Upper-Class JD and LLM Course (Washington, DC Jan. 8, 2018).
441. “The 2015 Federal Rules Amendments – Two Years Later and Counting” and “An Introduction to Federal Rule of Evidence 502,” Topics in Electronic Discovery, Georgetown University Law Center Spring 2018 Week One Upper-Class JD and LLM Course (Washington, DC Jan. 9, 2018).
442. “An Introduction to Search and Review in eDiscovery,” Topics in Electronic Discovery, Georgetown University Law Center Spring 2018 Week One Upper-Class JD and LLM Course (Washington, DC Jan. 10, 2018).
443. “Trending Now: #Competence, #Cooperation, #Social Media, and . . .,” Topics in Electronic Discovery, Georgetown University Law Center Spring 2018 Week One Upper-Class JD and LLM Course (Washington, DC Jan. 11, 2018).
444. “2018 Update on Ethics in Litigation,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Amy Walker Wagner, American Law Institute Continuing Legal Education (“ALI-CLE”) Webcast (Jan. 16, 2018).
445. “ESI for Dummies: What Every Legal Team Should Know – The Lawyer’s Guide to ESI and Forensics 101,” with Nicholas P. Chrysanthem, Michael L. Fox, and Hon. Ronald J. Hedges, New York State Bar Association 2018 Annual Meeting, LPM Day – Hot Topics in Law Practice Management (New York, NY Jan. 25, 2018).
446. “Presentation of the Honorable Shira Scheindlin Lifetime Achievement Award to the Honorable Craig B. Shaffer,” Zapproved Corporate E-Discovery Hero Awards Ceremony (New York, NY Jan. 29, 2018).
447. “Fostering AI Innovation in Canada,” with Marcus Brubaker, Mayor Jeff Lehman, Victor Garcia, Vinay Mehta, and Greg Wooton, Osgoode Intellectual Property Law and Technology Program Round Table Discussion on Bracing for Impact – The Artificial Intelligence Challenge: A Roadmap for AI Governance in Canada, (Toronto, ON Feb. 1, 2018).
448. “AI for Social Good,” with David Lepofsky, Brandie M. Nonnecke, Guy Sediman, Bob Tarantino, and Jutta Treviranus, Osgoode Intellectual Property Law and Technology Conference on Bracing for Impact – The Artificial Intelligence Challenge: A Roadmap for AI Governance in Canada, (Toronto, ON Feb. 2, 2018).
449. “Data Disarmament: A Fireside Chat with Cathy O’Neil on the Ethical Challenges of AI,” with Cathy O’Neil (Waterloo, ON Feb. 8, 2018).
450. “Fundamentals of Electronic Discovery and Technology-Assisted Review,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Feb. 15, 2018).

- 451. “An Introduction to Technology-Assisted Review for eDiscovery,” Guest Lecture at Tessa Jacobs’ Electronic Discovery Course at the University of Missouri–Kansas City Law School (Feb. 27, 2018).
- 452. “Applying What We Have Learned from ‘eDiscovery 1.0’ to New and Evolving Legal Challenges,” with Jerone J. English, The 12th Annual Sedona Conference Institute (“TSCI”) on Applying eDiscovery Skills and Technologies to All Areas of the Law (Nashville, TN Mar. 1, 2018).
- 453. “Using Data Analytics and Metrics to Achieve Proportionality,” with Gareth Evans, Phil Favro, Hon. Leda Wettre, The 12th Annual Sedona Conference Institute (“TSCI”) on Applying eDiscovery Skills and Technologies to All Areas of the Law (Nashville, TN Mar. 1, 2018).
- 454. “Artificial Intelligence, Ethics, and the Law,” with Nicolas Economou, Mark Hedegus, and Jeremy Kemnitz, The 12th Annual Sedona Conference Institute (“TSCI”) on Applying eDiscovery Skills and Technologies to All Areas of the Law (Nashville, TN Mar. 2, 2018).
- 455. “Algorithms, Machine Learning, and Artificial Intelligence – The Myth and the Hype,” with Michael Arkfeld and Thomas I. Barnett, Seventh Annual Arizona State University (“ASU”) – Arkfeld eDiscovery & Digital Evidence Conference on Gaining an Edge: Law, Technology, and Analytics (Phoenix, AZ Mar. 6, 2018).
- 456. “The Nuts and Bolts of Negotiating a Technology-Assisted Review (TAR) Protocol,” with Robert Brownstone, Bruce Hedin, and Hon. Andrew J. Peck, Seventh Annual Arizona State University (“ASU”) – Arkfeld eDiscovery & Digital Evidence Conference on Gaining an Edge: Law, Technology, and Analytics (Phoenix, AZ Mar. 7, 2018).
- 457. “What Attorney Competence Means When It Comes to Handling Electronically Stored Information,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Hon. Lisa Margaret Smith, NYSBA Ethics in the Digital Age (New York, NY Mar. 13, 2018).
- 458. “The Do’s and Don’ts of Attorney Social Media Use and Advice to Clients: AN Overview of the Rules of the Road,” with Michael L. Fox, Ignatius A. Grande, and Scott L. Malouf, NYSBA Ethics in the Digital Age (New York, NY Mar. 13, 2018).
- 459. “An Introduction to Technology-Assisted Review for eDiscovery,” Guest Lecture at Hon. James C. Francis IV Electronic Discovery Course at City University of New York (Long Island City, NY Mar. 15, 2018).
- 460. “An Introduction to Electronic Discovery,” with Mark A. Berman, Guest Lecture at John Tsiforas’ Computer Technology in Legal Practice at the Maurice A. Deane School of Law at Hofstra University (Hempstead, NY Mar. 19, 2018).
- 461. “What is Artificial Intelligence (“AI”)? How Does It Work? What Are the Potential Implications of AI in General, and for Your Practice,” With Allison Arden Besunder and Kathryn Hume, New York State Bar Association Technology and the Legal Profession Spring 2018 Artificial Intelligence Webinar Series (Mar. 21, 2018).
- 462. “Your Computer is Smarter and Faster Than You: Using Technology-Assisted Review in Your Litigation Practice to Increase Efficiency and Reduce eDiscovery Costs,” University of Nebraska College of Law Continuing Legal Education (“CLE”) Program (Omaha, NE Mar. 28, 2018).

- 463. “The Basics of eDiscovery, or How to Make Yourself Invaluable as an Associate from Day 1 By Learning Something No One Else at Your Firm Understands, Guest Lecture at University of Nebraska-Lincoln College of Law (Lincoln, NE Mar. 29, 2018).
- 464. “Artificial Intelligence, Real Benefits and Challenges,” Consilio Women’s Power Summit CLE and Red Door Spa Event (New York, NY Apr. 12, 2018).
- 465. “Nonconsensual Porn (Revenge Porn)” with Carrie Goldberg, Elisa D’Amico, Andrew Sta. Ana, and Ari Ezra Waldman, National Association of Women Judges Mid-Year Conference (Brooklyn, NY Apr. 13, 2018).
- 466. NYSBA AI Webinar in The Growing Use of Artificial Intelligence Applications in the Legal Profession and Their Potential Impact on Your Legal Practice, with Daniel Meyers and Scott Reents (Apr. 18, 2018).
- 467. “Resolving E-Discovery Disputes Efficiently in Arbitration and in Court,” with Mark A. Berman, Hon. Jeremy Feinberg, and Hon. Frank Maas, Continuing Legal Education (“CLE”) Program Co-Sponsored by JAMS and the Commercial and Federal Litigation Section of the New York State Bar Association (New York, NY Apr. 25, 2018).
- 468. “Where Waterloo Meets AI-Ethics,” with Sheldon Fernandez, Leah Govia, and Kate Larson, University of Waterloo Alumni and Donors Event (Mississauga, ON Apr. 26, 2018).
- 469. “Artificial Intelligence, Real Benefits and Ethical Challenges,” The Sedona Conference Track at the 17th Annual IPRO Innovations Conference 2018 (Scottsdale, AZ Apr. 30, 2018).
- 470. “Preparing for and Responding to Internal and Government Investigations,” with Jerami D. Kemnitz, Glenn Melcher, David Shonka, The Sedona Conference Track at the 17th Annual IPRO Innovations Conference 2018 (Scottsdale, May 1, 2018).
- 471. “Technology-Assisted Review for eDiscovery,” with William (“Bill”) Hamilton and Hon. Gary R. Jones, Eleventh Circuit Biannual Judicial Conference (Ponte Vedra Beach, FL May 3-4, 2018).
- 472. “Artificial Intelligence: Genuine Benefits and Challenges,” part of panel on Civil Claims in the Era of Automation and Artificial Intelligence, with Jeremy de Beer and Evan Thomas, National Judicial Institute Civil Law Seminar: Resistance is Futile – The Technological Transformation of Substantive and Procedural Civil Law, Evidence, and the Administration of Civil Justice (St. John’s, NL May 9, 2018).
- 473. “A Candid Conversation with U.S. District Judge Paul W. Grimm,” with Hon. Paul W. Grimm, Deloitte Eleventh Annual Electronic Discovery Symposium for Government Agencies (Washington, DC May 10, 2018).
- 474. “Attorney Algorithm Aversion and Infatuation,” Georgetown University Law Center / Exterro edTalk (May 16, 2018).
- 475. “Inside the Black Box: Search, Artificial Intelligence, and Ethics,” with John Barkett and James Zucker, American Bar Association (“ABA”) 12th Annual National Institute on eDiscovery Conference (Chicago, IL May 18, 2018).
- 476. “Academy Overview,” with Craig D. Ball and Hon. John M. Facciola, Georgetown eDiscovery Training Academy (Washington, DC June 3, 2018).

- 477. “Practicum on eDiscovery Planning,” with Craig D. Ball and Hon. John M. Facciola, Georgetown eDiscovery Training Academy (Washington, DC June 3, 2018).
- 478. “Law of Collections and Forms of Production – Part I,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 5, 2018).
- 479. “Law of Collections and Forms of Production – Part II,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 5, 2018).
- 480. “Fundamentals of Technology-Assisted Review,” Georgetown eDiscovery Training Academy (Washington, DC June 6, 2018).
- 481. “TAR Exercises,” with Gordon V. Cormack, Georgetown eDiscovery Training Academy (Washington, DC June 6, 2018).
- 482. “The Courts and TAR: Where Are They and Where They Are Going,” with Craig D. Ball, Hon. John M. Facciola, and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 6, 2018).
- 483. “Mock 30(b)(6) IT Witness Deposition and Discussion,” with Craig D. Ball, Gordon V. Cormack, Hon. John M. Facciola, and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 7, 2018).
- 484. “Federal Rule of Evidence 502,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 7, 2018).
- 485. “Privacy and Regulation of the eDiscovery Process: The Stored Communications Act, Carpenter and Its Implications, Sovereign Power, and the General Data Protection Regulation,” with Hon. John M. Facciola, Georgetown eDiscovery Training Academy (Washington, DC June 7, 2018).
- 486. “Mock 26(f) Conference I,” with Hon. John Anderson, Georgetown eDiscovery Training Academy (Washington, DC June 8, 2018).
- 487. “Mock 26(f) Conference II,” with Hon. John Anderson, Georgetown eDiscovery Training Academy (Washington, DC June 8, 2018).
- 488. “Artificial Intelligence in Law,” RSM Canada’s Business Professional Services Law Firm Dinner (Toronto, ON June 13, 2018).
- 489. “Artificial Intelligence and the Legal Profession,” with Mark Bowman and R. Douglas Vaughn, 2018 Annual Meeting of the International Association of Defense Counsel (“IADC”) (Lisbon, Portugal July 9, 2018).
- 490. “eDiscovery for Every Litigator,” Half-Day Continuing Legal Education (“CLE”) Program for Kessler, Topaz, Meltzer & Check (Radnor, PA Aug. 23, 2018).
- 491. “The Quest for Total Recall,” with Gordon V. Cormack, Keynote Address at the Eighteenth ACM Symposium on Document Engineering (“DocEng 2018”) (Halifax, Nova Scotia Aug. 29, 2018).

- 492. “Update on Technology-Assisted Review: Advances and Challenges,” with Gil Keteltas and Ashish S. Prasad, Hot Topics in Electronic Discovery 2018: What Corporate and Outside Counsel Need to Know, Practising Law Institute (“PLI”) Conference (New York, NY Sept. 17, 2018).
- 493. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s University School of Law (San Antonio, TX Sept. 20, 2018).
- 494. “Artificial Intelligence in Legal Applications,” with Kathryn Hume and Sondra Rebenchuk, Canadian Association of General Counsels (Las Vegas, NV Sept. 21, 2018).
- 495. “An Overview of AI and Other Emerging Legal Technologies,” with Craig Boise, Chris Martin, Kathleen Turland, and David Zumpano, Syracuse University College of Law Symposium on Artificial Intelligence, Advanced Technologies, and the Practice of Law (Syracuse, NY Sept. 27, 2018).
- 496. “The Role and Implications of AI and Emerging Technologies in Law Practice,” with Craig Boise, Christine Hasiotis, Chris Martin, Kathleen Turland, and David Zampano, Syracuse University College of Law Symposium on Artificial Intelligence, Advanced Technologies, and the Practice of Law (Syracuse, NY Sept. 27, 2018).
- 497. Keynote Address on Blueprint to the Future: Disruptive Technology, University of Waterloo Faculty of Science (14th Annual) 2018 Fusion Conference (Waterloo, ON Sept. 29, 2018).
- 498. “Fundamentals of Electronic Discovery and Technology-Assisted Review,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Oct. 4, 2017).
- 499. “What is Societal Computing and Why Should You Care,” with Robin Cohen and Srinivasan Keshav, Women in Computer Science (“WiCS”) Event (Waterloo, ON Oct. 12, 2018).
- 500. “Fundamentals of eDiscovery and Electronically Stored Information (‘ESI’) – Part I,” National Judicial College General Jurisdiction/Special Courts: Advanced Programs (Reno, NV Oct. 18, 2018).
- 501. “Fundamentals of eDiscovery and Electronically Stored Information (‘ESI’) – Part II,” National Judicial College General Jurisdiction/Special Courts: Advanced Programs (Reno, NV Oct. 18, 2018).
- 502. “Ethics of Social Media,” National Judicial College General Jurisdiction/Special Courts: Advanced Programs (Reno, NV Oct. 18, 2018).
- 503. “Ethical and Other Challenges with Artificial Intelligence (“AI”), National Judicial College General Jurisdiction/Special Courts: Advanced Programs (Reno, NV Oct. 18, 2018).
- 504. “Not Magic—Science: The Science Behind CAL and Other TAR,” with Carolyn Anger and Jeff Gilles, International Legal Technology Association (“ILTA”) Webinar (Oct. 23, 2018).
- 505. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Hon. James C. Francis IV’s Electronic Discovery Course at City University of New York Law School (Long Island City, NY Oct. 24, 2018).
- 506. “The Role of Special/eDiscovery Masters,” with Thomas C. Gricks, III, Hon. MaryBeth Kelly, Thomas Lidbury, and John Pappas, Third Annual Detroit Chapter and Inaugural Association of Certified eDiscovery Specialists (“ACEDS”) Midwest Regional eDiscovery Conference (Detroit, MI Oct. 26,

2018).

- 507. “What Attorney Competence Means When It Comes to Handling Electronically Stored Information and New Technologies,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Hon. Lisa Margaret Smith, New York State Bar Association Ethics in the Digital Age Continuing Legal Education (“CLE”) Program (New York, NY Nov. 1, 2018).
- 508. “An Overview of the Do’s and Don’ts of Attorney Social Media Use and Advice to Clients,” with Michael L. Fox, Ignatius A. Grande, and Scott L. Malouf, New York State Bar Association Ethics in the Digital Age Continuing Legal Education (“CLE”) Program (New York, NY Nov. 1, 2018).
- 509. “How to Deal with New Technology,” with Gail L. Gottehrer, Taa Grays, Hon. Ronald J. Hedges, and Hon. Matthew A. Sciarrino, Jr., New York State Bar Association Continuing Legal Education (“CLE”) Program (New York, NY Nov. 2, 2018).
- 510. “Artificial Intelligence and Other Technologies in the Legal Space,” with Benjamin Alarie, Xavier Beauchamp-Tremblay, and James Swanson, The Advocates’ Society Ontario eDiscovery Institute 2018 (Toronto, ON Nov. 6, 2018).
- 511. “Responsible AI,” with Courtney Doagoo, Ryan Robert Jenkins, and Donna Litt, Center for International Governance Innovation (“CIGI”) and Communitel/Open Data Exchange (“ODX”) Data Hub Sessions (Waterloo, ON Nov. 7, 2018).
- 512. “Artificial Intelligence, Genuine Benefits and Challenges: Is Your Computer a Better Lawyer Than You?,” with Hon. Kristen L. Mix, Martin Tully, and Jeremiah Weasenforth, Georgetown University Law Center Advanced eDiscovery Institute 2018 (Washington, DC Nov. 15, 2018).
- 513. “AI in Medicine Academic Panel,” with Philip Awadalla, Audrey Chung, Sunit Das, and Stephen MacKinnon, University of Waterloo 2018 Biotechnology and BioEngineering Conference (“BioTEC 2018”) (Waterloo, ON Nov. 17, 2018).
- 514. “AI in Law: The Quest for Total Recall,” Symposium at Technion Israel Institute of Technology (Haifa, Israel Nov. 21, 2018).
- 515. “Breakfast Roundtable Discussion on TAR,” with Roddy Bourke, Gordon V. Cormack, and Chris Dale at McCann Fitzgerald (Dublin, Ireland Nov. 29, 2018).
- 516. “Artificial Intelligence, Real Benefits and Challenges: Is Your Computer Becoming a Better Lawyer Than You?,” Keynote Address at La Touche Training eDiscovery and Information Governance Conference 2018 (Dublin, Ireland Nov. 30, 2018).
- 517. “Panel Discussion on Technology-Assisted Review,” with Chris Dale, Karyn Harty, and Kelly Atherton, La Touche Training eDiscovery and Information Governance Conference 2018 (Dublin, Ireland Nov. 30, 2018).
- 518. “Fundamentals of TAR,” Continuing Legal Education (“CLE”) Program at Capital One (Henricho, VA Dec. 6, 2018).

2017 TALKS

519. “An Introduction to eDiscovery: What is ‘ESI,’ What Makes It So Different from Paper, and What Role Does It Play in the Litigation Process?,” Georgetown University Law Center Spring 2017 First-Week Upper-Class JD and LLM Course on Topics in Electronic Discovery (Washington, DC Jan. 9, 2017).
520. “How Do the Federal Rules of Civil Procedure Related to eDiscovery Work, and What is Federal Rule of Evidence 502?,” Georgetown University Law Center Spring 2017 First-Week Upper-Class JD and LLM Course on Topics in Electronic Discovery (Washington, DC Jan. 10, 2017).
521. “Fundamentals of Search and Review in eDiscovery and Developing a Sound and Defensible Search and Review Process,” Georgetown University Law Center Spring 2017 First-Week Upper-Class JD and LLM Course on Topics in Electronic Discovery (Washington, DC Jan. 11, 2017).
522. “Selected Ethical and Other Issues in eDiscovery: Attorney Competence, Cooperation, Social Media, Bring Your Own Device, and The Internet of Things,” Georgetown University Law Center Spring 2017 First-Week Upper-Class JD and LLM Course on Topics in Electronic Discovery (Washington, DC Jan. 12, 2017).
523. “Technology-Assisted Review: Fact or Fiction?,” with Gordon V. Cormack, Spring 2017 E-Discovery Distinguished Speakers Series, University of Florida Levin College of Law International Center for Automated Information Retrieval (Gainesville, FL Feb. 20, 2017).
524. “More on Technology-Assisted Review,” Guest Lecture at William (Bill) Hamilton’s Electronic Discovery Course at the University of Florida Fredric G. Levin College of Law (Gainesville, FL Feb. 20, 2017).
525. “More on Technology-Assisted Review: Fact or Fiction?,” Guest Lecture at William (Bill) Hamilton’s Electronic Discovery Data Analysis and Review Course at the University of Florida Fredric G. Levin College of Law (Gainesville, FL Feb. 20, 2017).
526. “The Sedona Conference TAR Case Law Primer,” with Lea Malani Bays, Gareth Evans, Joseph P. Guglielmo, Hon. Andrew J. Peck, Sandra Rampersaud, and Kenneth J. Withers, The Sedona Conference Working Group 1 Webinar (Feb. 22, 2017).
527. “Fundamentals of Electronic Discovery and Technology-Assisted Review,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (Feb. 23, 2017).
528. “Best Practices in Preservation and Collection,” Continuing Legal Education (“CLE”) Program at ConocoPhillips (Houston, TX Mar. 1, 2017)
529. “Implementing Advanced Technology to Achieve the ‘Just, Speedy, and Inexpensive Determination of Every Action,’” with Gareth Evans, Tracy Greer, Robert Keeling, and Hon. Andrew J. Peck, 11th Annual Sedona Conference Institute (“TSCI”) Program on eDiscovery: Discovery in a Dynamic Digital World (Houston, TX Mar. 2, 2017).
530. “Ethical Dangers in Social Media,” with Denise E. Backhouse, Hon. Cathy Ann Bencivengo, and Kevin Brady, 11th Annual Sedona Conference Institute (“TSCI”) Program on eDiscovery: Discovery in a Dynamic Digital World (Houston, TX Mar. 3, 2017).

- 531. “Search II: Starting Off on the Right Foot with Technology-Assisted Review,” with Andrea D’Ambra, Alexander T. Goth, and Hal Marcus, Sixth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference on The New Normal: Law, Technology, and Innovation (Phoenix, AZ Mar. 8, 2017).
- 532. “The New Normal,” with Brad Harris, Thomas Morrissey, and Hon. Xavier Rodriguez, Sixth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference on The New Normal: Law, Technology, and Innovation (Phoenix, AZ Mar. 9, 2017).
- 533. “Report from the Arizona State University (“ASU”) – Arkfeld Legal Analytics and Big Data Workshop,” with Michael Arkfeld, Daniel M. Katz, and William Kellerman, Sixth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference on The New Normal: Law, Technology, and Innovation (Phoenix, AZ Mar. 10, 2017).
- 534. “Electronic Discovery – The Current State of Play as to the Scope of Electronic Discovery in the Courts and in Arbitration: What the Rules Say and What is Actually Happening,” with Sherman W. Kahn, Richard L. Mattiaccio, Hon. Shira A. Sheindlin, Steven Skulnik, and Hon. Ira B. Warshawsky, New York State Bar Association Joint Program on Cross Fertilization of Best Practices Recommendations by the Commercial and Federal Litigation and Dispute Resolution Sections for Improving Dispute Resolution in the Courts and in Arbitration, Fordham Law School (New York, NY Mar. 13, 2017).
- 535. “Fundamentals of Technology-Assisted Review,” Continuing Legal Education (“CLE”) Program at Holwell, Shuster & Goldberg LLP (New York, NY Mar. 15, 2017).
- 536. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Tessa Jacobs’ Electronic Discovery Course at the University of Missouri–Kansas City Law School (Mar. 22, 2017).
- 537. “What Does Attorney Competence Mean When It Comes to Handling Electronic Discovery,” with Hon. Victoria A. Graffeo, Hon. Ronald J. Hedges, and Shawndra G. Jones, Legal Ethics in the Digital Age 2017, New York State Bar Association Commercial and Federal Litigation Section Program (New York, NY Mar. 30, 2017).
- 538. “The Do’s and Don’ts of Attorney Social Media Use and Advice to Clients: An Overview of the ‘Rules of the Road’” with Michael L. Fox, Ignatius A. Grande, and Scott L. Malouf, Legal Ethics in the Digital Age 2017, New York State Bar Association Commercial and Federal Litigation Section Program (New York, NY Mar. 30, 2017).
- 539. “Ethics and Electronically Stored Information,” with Hon. Ronald J. Hedges and Shawndra G. Jones, American Law Institute (“ALI”) Continuing Legal Education (“CLE”) Live Video Webcast Program (Philadelphia, PA Mar. 31, 2017).
- 540. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Joel Wuesthoff’s Topics in eDiscovery, Cybersecurity, and Forensics Course at the University of Maine School of Law Center for Law & Innovation (Portland, Maine April 7, 2017).
- 541. “Fundamentals of Technology-Assisted Review and Continuous Active Learning (CAL),” Continuing Professional Development (“CPD”) Program at Cassels Brock & Blackwell LLP (Toronto, ON Apr. 13, 2017).
- 542. “The Effect of Federal Rules Changes and New Technology, and Changes Needed to Resuscitate Class Actions,” with Stephen Burbank, Elizabeth Cabraser, Hon. Robert Dow Jr., Brian Fitzpatrick, Richard

Marcus, and Darren Robbins, at the Institute for Law and Economic Policy (“ILEP”) and University of North Carolina Law Review 23rd Annual Symposium on Secrecy (Naples, FL Apr. 21, 2017).

- 543. “Understanding the Science and Mathematics Behind TAR,” with Kenneth J. Withers, Keynote for The Sedona Conference® Legal Track at IPRO “Innovations” 2017 Conference (Scottsdale, AZ Apr. 25, 2017).
- 544. “eDiscovery Without Rules: Responding to Government and Internal Investigations,” with Kevin Brady and David C. Shonka, The Sedona Conference® Legal Track at IPRO “Innovations” 2017 Conference (Scottsdale, AZ Apr. 25, 2017).
- 545. “Your Computer is Smarter and Faster Than You: Embracing Technology-Assisted Review and Artificial Intelligence in Your Litigation Practice,” with Brendan Miller and Curtis Collette, ABA Section of Litigation Annual Conference (San Francisco, CA May 4, 2017).
- 546. “#Social Media: What You Don’t Know Can Harm You,” with Mark A. Berman and Hon. Ronald J. Hedges, New York State Supreme Court Appellate Divisions Joint In-House Continuing Legal Education (“CLE”) Program (New York, NY May 9, 2017).
- 547. “A Candid Conversation with Former U.S. District Judge Shira A. Scheindlin,” Deloitte Tenth Annual Electronic Discovery Symposium for Government Agencies (Washington, DC May 11, 2017).
- 548. “Using Mediation to Effectively Resolve eDiscovery Disputes,” with Mike Hamilton, Hon. Ronald J. Hedges, and Hon. Frank Maas, Exterro Webinar (May 12, 2017).
- 549. “2017 eDiscovery Update: Trends and Developments Under the Federal Rules and Beyond,” with Hon. James C. Francis IV, Hon. Ronald J. Hedges, and Jeane A. Thomas, American Law Institute (“ALI”) Continuing Legal Education (“CLE”) Webcast (May 31, 2017).
- 550. “Practicum on eDiscovery Planning,” with Craig D. Ball, Hon. John M. Facciola, and Tom O’Connor, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 4, 2017).
- 551. “Realizing Your Goals for the Academy,” with Craig D. Ball, Hon. John M. Facciola, and Tom O’Connor, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 4, 2017).
- 552. “An Introduction to eDiscovery: What is ‘ESI,’ What Makes It So Different From Paper, and What Role Does eDiscovery Play in the Litigation Process?,” Topics in Electronic Discovery Course, Georgetown University Law Center Summer 2017 First-Week Upper-Class JD and LLM Course (Washington, DC June 5, 2017).
- 553. “The Law of Collections and Form of Production,” with Mark S. Sidoti, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 6, 2017).
- 554. “How Do the Federal Rules of Civil Procedure Related to eDiscovery Work, and What is Federal Rule of Evidence 502?,” Topics in Electronic Discovery Course, Georgetown University Law Center Summer 2017 First-Week Upper-Class JD and LLM Course (Washington, DC June 6, 2017).

- 555. “Technology-Assisted Review and Enhanced Search,” The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 7, 2017).
- 556. “The Courts and Predictive Coding: Where They Are and Where They Are Going,” with Craig D. Ball, Hon. John M. Facciola, Tom O’Connor, and Mark S. Sidoti, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 7, 2017).
- 557. “Fundamentals of Search and Review in eDiscovery and Developing a Sound and Defensible Search and Review Process,” Topics in Electronic Discovery Course, Georgetown University Law Center Summer 2017 First-Week Upper-Class JD and LLM Course (Washington, DC June 7, 2017).
- 558. “Federal Rule of Evidence 502,” with Hon. John M. Facciola and Mark S. Sidoti, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 8, 2017).
- 559. “Privacy and Regulation of eDiscovery Process,” with Craig D. Ball, Hon. John M. Facciola, Tom O’Connor, and Mark S. Sidoti, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 8, 2017).
- 560. “Ethics,” with Hon. John M. Facciola and Mark S. Sidoti, The Tenth Annual eDiscovery Training Academy, Georgetown University Law Center (Washington, DC June 8, 2017).
- 561. “Selected Ethical and Other Issues in eDiscovery: Attorney Competence, Cooperation, Social Media, Bring Your Own Device, and the Internet of Things – Part I,” Topics in Electronic Discovery,” Georgetown University Law Center Summer 2017 First-Week Upper-Class JD and LLM Course (Washington, DC June 8, 2017).
- 562. “Selected Ethical and Other Issues in eDiscovery: Attorney Competence, Cooperation, Social Media, Bring Your Own Device, and the Internet of Things – Part II,” Topics in Electronic Discovery,” Georgetown University Law Center Summer 2017 First-Week Upper-Class JD and LLM Course (Washington, DC June 9, 2017).
- 563. “Selective Digital Amnesia,” with Gordon V. Cormack, DESI VII Workshop on Using Advanced Data Analysis in eDiscovery and Related Disciplines to Identify and Protect Sensitive Information in Large Collections at the 16th International Conference on Artificial Intelligence and the Law (“ICAIL”) 2017 (London, UK June 12, 2017).
- 564. “Technology-Assisted Review: Fact or Fiction?,” with Tess Blair, Gordon V. Cormack, and Chris Dale, Morgan Lewis & Bockius LLP Continuing Legal Education (“CLE”) Program (London, UK June 13, 2017).
- 565. “Artificial Intelligence,” with Julie Daughtry, Gordon V. Cormack, Francis McGovern, Steven Robinson, and Hon. Lee Rosenthal, 2017 Judges’ Seminar, Duke Law Center for Judicial Studies (Durham, NC June 16, 2017).
- 566. “eDiscovery and Social Media Issues,” with Mark Berman and Hon. Ronald J. Hedges, Continuing Legal Education (“CLE”) Program for Court Attorneys and Principal Law Clerks of the New York State Appellate Division First Department (New York, NY June 27, 2017).
- 567. “Fundamentals of Electronic Search: From Keywords to Technology-Assisted Review,” with Gordon V. Cormack and Jamie A. Chuck, Hawaii State Bar Association (Honolulu, HI July 18, 2017).

- 568. “Protecting the Confidentiality of Client Communications and Records Both in Practice and in Litigation,” with Gordon V. Cormack and Jamie A. Chuck, Hawai‘i County Bar Association in Conjunction with the Hawaii State Bar Association (Hilo, HI July 20, 2017).
- 569. “Enhancing Your Value as a Paralegal in an Increasingly Data-Driven World,” with Gordon V. Cormack, Keynote Luncheon at Hawaii Paralegal Association Legal Expo (Honolulu, HI July 21, 2017).
- 570. “ESI Basics – Part I,” National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 15, 2017).
- 571. “ESI Basics – Part II,” National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 15, 2017).
- 572. “Search Today and Tomorrow – Part I,” National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 15, 2017).
- 573. “Search Today and Tomorrow – Part II,” National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 15, 2017).
- 574. “Moderated Questions, Answers, and Open Discussion,” with Hon. Daniel J. Crothers and Mark Lanterman, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 15, 2017).
- 575. “Hands On Discovery – Computer Lab on Search,” with Hon. Daniel J. Crothers, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 16, 2017).
- 576. “ESI Legal Issues: From Privacy to Possession, Custody, or Control,” with Hon. Daniel J. Crothers, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 16, 2017).
- 577. “Proportionality and Cost Shifting,” with Hon. Daniel J. Crothers, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 17, 2017).
- 578. “Spoliation and Sanctions,” with Hon. Daniel J. Crothers, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 17, 2017).
- 579. “Open Discussion and Conclusions,” with Hon. Daniel J. Crothers and Mark Lanterman, National Judicial Collect Course on Judging in the Digital Age: Conquering Discovery and Admission of ESI (Reno, NV Aug. 17, 2017).
- 580. “Straight Talk About TAR,” with Thomas C. Gricks III, Jeremy Pickens, and John Tredennick, Catalyst Webinar (Aug. 30, 2017).
- 581. “What is TAR?,” with Evan Benjamin, Bruce Hedin, George Socha, and Hon. William R. Wilson, Duke Bench-Bar Conference on TAR Best Practices (Arlington, VA Sept. 7-8, 2017).
- 582. “Taming the Over-Preservation Beast,” with Sarah Donovan, Jana Limer Mills, and Joe Morris, Zapproved 2017 Conference on Preservation Excellence (“PREX 2017”) (Portland, OR Sept. 13, 2017).

- 583. “Judicial Panel: Return of Case Law by the Clock,” with Hon. Ronald J. Hedges, Hon. Elizabeth Laporte, Hon. Frank Maas, Hon. Andrew J. Peck, and Hon. Xavier Rodriguez, Zapproved 2017 Conference on Preservation Excellence (“PREX 2017”) (Portland, OR Sept. 14, 2017).
- 584. “Rule 34 of the Federal Rules of Civil Procedure: eDiscovery Requests and Responses,” with Jeffrey Fowler and Ariana J. Tadler, Practicing Law Institute (“PLI”) Electronic Discovery Institute 2017: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 18, 2017).
- 585. “Fundamentals of Technology-Assisted Review,” Guest Lecturer at Hon. Xavier Rodriguez’s Electronic Discovery Course at St. Mary’s University School of Law (San Antonio, TX Sept. 21, 2017).
- 586. “Industry / Faculty Panel,” with Alex Hudak, Sergey Gorbunov, Kate Larson, and Jeff Pound, 2017 David R. Cheriton School of Computer Science Undergraduate Research Opportunities Conference (“UROC 2017”) (Waterloo, ON Sept. 22, 2017).
- 587. “Straight Talk on TAR: Addressing Head On the Myths and Misinformation That are Holding TAR Back,” with Eric Schultenover, Ron Tienzo, and John Tredennick (Nashville, TN Oct. 3, 2017).
- 588. “Straight Talk on TAR: Addressing Head on the Myths and Misinformation That are Holding TAR Back,” with Michael Murphy, Ron Tienzo, and John Tredennick (Atlanta, GA Oct. 4, 2017).
- 589. “Fundamentals of Technology-Assisted Review and Continuous Active Learning,” with Gordon V. Cormack, at Stikeman Elliott LLP (Toronto, ON Oct. 11, 2017).
- 590. “The Future of E-Discovery Innovation in Canada,” with Hon. Colin L. Campbell and James Swanson, Ontario eDiscovery Institute 2017 Co-Sponsored by The Advocates’ Society, the Ontario Bar Association, and The Law Society of Upper Canada (Toronto, ON Oct. 16, 2017).
- 591. “How to Run a Successful Predictive Coding Project,” Advocates’ Society Ontario eDiscovery Institute 2017 Co-Sponsored by The Advocates’ Society, the Ontario Bar Association, and The Law Society of Upper Canada (Toronto, ON Oct. 16, 2017).
- 592. “Attorney Algorithm Aversion,” TED Talk at 2017 Fin (Legal) Tech Conference sponsored by The Law Lab at Illinois Tech – Chicago Kent College of Law (Chicago, IL Oct. 19, 2017).
- 593. “What Attorney Competence Means When It Comes to Handling Electronically Stored Information,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Hon. Roslyn H. Richter, Legal Ethics in the Digital Age Fall 2017, New York State Bar Association Commercial and Federal Litigation Section Program (New York, NY Oct. 25, 2017).
- 594. “The Do’s and Don’ts of Attorney Social Media Use and Advice to Clients: An Overview of the ‘Rules of the Road,’” with Michael L. Fox, Daniel Lust, and Scott L. Malouf, Legal Ethics in the Digital Age Fall 2017, New York State Bar Association Commercial and Federal Litigation Section Program (New York, NY Oct. 25, 2017).
- 595. “Technology and Legal Education,” with Joshua Covey, Gerald Lewis, Jr., and Gary Merchant, Second Annual Legal Analytics & Big Data Workshop, Center for Law, Science & Innovation at Arizona State University (“ASU”) Law School (Phoenix, AZ Oct. 27, 2017).

- 596. “TAR Trends Around the World,” with Chris Dale, Constantine Pappas, and Hon. Andrew J. Peck, Technology in Practice (“TiP”) 2017 National eDiscovery and Litigation Technology Conference (Toronto, ON Nov. 9, 2017).
- 597. “Where is TAR Headed in 2018 and Beyond?,” with Hon. Kristin L. Mix, Jeffrey M. Sharer, James A. Sherer, and Ronni D. Solomon, Georgetown Advanced eDiscovery Institute (Washington, DC Nov. 16, 2017).
- 598. “Law, Ethics, and Policy in an Automated World,” with Carol Eoannou, Keynote at Bloomberg Law’s Emerging Technologies and Legal Ethics Program (New York, NY Nov. 30, 2017).
- 599. “A Lawyer’s Ethical Duties with Emerging Technologies,” with Roy D. Simon, Harris Z. Tilovitz, and James Q. Walker, Panel at Bloomberg Law’s Emerging Technologies and Legal Ethics Program (New York, NY Nov. 30, 2017).
- 600. “Updating Your Toolkit: Experts Discuss,” with Craig Ball, Mike Hamilton, Ralph C. Losey, and George Socha, Exterro Third Annual eDiscovery Day Webcast (Dec. 1, 2017).
- 601. “The Rules on their Second Anniversary Including a Case Study on Sanctions,” with Kevin F. Brady, Hon. J. Michelle Childs, Hon. John M. Facciola, Hon. James C. Francis IV, Dawson Horn III, Hon. Andrew J. Peck, James A. Sherer, and Hon. Lisa Margaret Smith, Sandpiper Partners Fourth Annual Innovation in eDiscovery Conference (New York, NY Dec. 7, 2017).
- 602. “Technology, TAR, Machine Learning, and AI,” with Kevin F. Brady, Hon. J. Michelle Childs, Hon. John M. Facciola, Hon. James C. Francis IV, Dawson Horn III, David J. Kessler, Mollie C. Nichols, Hon. Andrew J. Peck, James A. Sherer, and Hon. Lisa Margaret Smith, Sandpiper Partners Fourth Annual Innovation in eDiscovery Conference (New York, NY Dec. 7, 2017).

2016 TALKS

- 603. “Requesting and Producing ESI,” with Hon. Ronald J. Hedges and Dean Emeritus Jim Rosenblatt, Guest Lecture at the Mississippi College School of Law Electronically Stored Information (E-Discovery) Course (Jackson, MS Jan. 12, 2016).
- 604. “Ethical Considerations,” with Hon. Ronald J. Hedges and Dean Emeritus Jim Rosenblatt, Guest Lecture at the Mississippi College School of Law Electronically Stored Information (E-Discovery) Course (Jackson, MS Jan. 12, 2016).
- 605. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Feb. 11, 2016).
- 606. “Technology-Assisted Review for eDiscovery,” Guest Lecture at William P. Butterfield and Allison Stanton’s eDiscovery Class at American University Washington College of Law (Washington, DC Feb. 16, 2016).
- 607. “Fundamentals of Electronic Discovery,” Guest Lecture at Karen Eltis’ Internet/Cyber Law Course at the University of Ottawa Faculty of Law (Mar. 1, 2015).
- 608. “Day 1 Keynote Address: The New Rules in Action,” with Lea Malani Bays, Kevin Brady, and Hon. Shira A. Scheindlin, 2016 Fifth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and

Digital Evidence Conference (Tempe, AZ Mar. 9, 2016).

- 609. “TAR Wars: Debating the Sticking Points,” with Lea Malani Bays, Hon. Craig B. Shaffer, John Tredennick, and Martin Tully, 2016 Fifth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference (Tempe, AZ Mar. 10, 2016).
- 610. “Getting Specific: Formulating and Responding to Rule 34 Requests in the New Age,” with Lea Malani Bays, Robert Owen, Hon. Craig Shaffer, Ariana J. Tadler, and Kelly Warner, The Tenth Annual Sedona Conference Institute on eDiscovery – Staying Ahead of the eDiscovery Curve: Retooling Your Practice Under the New Federal Rules (Rancho Bernardo, CA Mar. 17, 2016).
- 611. “Using Technology to Achieve Proportionality,” with James Bekier, Tor Gronborg, Taylor Hoffman, and Cecil Lynn, The Tenth Annual Sedona Conference Institute (“TSCI”) Program on eDiscovery – Staying Ahead of the eDiscovery Curve: Retooling Your Practice Under the New Federal Rules (Rancho Bernardo, CA Mar. 17, 2016).
- 612. “Ethics of Litigation,” with Merri A. Baldwin, Hon. Ronald J. Hedges, and Hon. Frank Maas, American Law Institute Continuing Legal Education (“ALI CLE”) Webinar (May 10, 2016).
- 613. “Leveraging the Use of Technology-Assisted Review,” with Tracy Greer, Chris May, and Glen Melcher, Deloitte Electronic Discovery Symposium for Government Agencies (Washington, DC May 12, 2016).
- 614. “Leveraging Rule 53 – The Value of the Special Master,” with Hon. John M. Facciola, Hon. Richard A. Levie, Hon. Nan R. Nolan, Deloitte Ninth Annual Electronic Discovery Symposium for Government Agencies (Washington, DC May 12, 2016).
- 615. “Proportionate and Cost-Effective eDiscovery: An Oxymoron?,” with Ignatius A. Grande, Hon. Barbara Kapnick, Hon. Andrew J. Peck, Sandra J. Rampersaud, and Anne S. Rutland, New York State Bar Association (“NYSBA”) Commercial and Federal Litigation Section Spring Meeting (Cooperstown, NY May 13 – 15, 2016).
- 616. “A Discussion of the Stickiest Issues Involving TAR,” with Henry J. Kelston, Hon. Nan R. Nolan, Hon. Andrew J. Peck, and Martin Tully, 2016 American Bar Association (“ABA”) Tenth Annual National Institute on eDiscovery (Chicago, IL May 20, 2016).
- 617. “The Rise of the Machines,” with John Barkett, Wendy Wen Yun Chang, and Edward J. Walters, American Bar Association (“ABA”) 42nd National Conference on Professional Responsibility,” (Philadelphia, PA June 2, 2016).
- 618. “Practicum on eDiscovery Planning,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, Georgetown eDiscovery Training Academy (Washington, DC June 5, 2016).
- 619. “Law of Collections and Forms of Production,” with Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 7, 2016).
- 620. “Technology-Assisted Review and Enhanced Search,” Georgetown eDiscovery Training Academy (Washington, DC June 8, 2016).
- 621. “The Courts and Predictive Coding: Where Are They and Where They Are Going,” with Craig Ball, Hon. John M. Facciola, Tom O’Connor, and Mark. S. Sidoti, Georgetown eDiscovery Training Academy

(Washington, DC June 8, 2016).

- 622. “Federal Rule of Evidence 502,” with Hon. John M. Facciola and Mark S. Sidoti, Georgetown eDiscovery Training Academy (Washington, DC June 9, 2016).
- 623. “Privacy Regulation of eDiscovery Process,” with Hon. John M. Facciola, Georgetown eDiscovery Training Academy (Washington, DC June 9, 2016).
- 624. “Mock Rule 26(f) and 16(b) Conferences,” with Hon. Paul W. Grimm, Georgetown eDiscovery Training Academy (Washington, DC, June 10, 2016).
- 625. “Comparative Judicial Ethics in the Digital Age: Lawyers, Judges, and Social Media – A U.S. Perspective” with Stephen Bindman, Karen Eltis, Hon. Frances Kiteley, and Hon. Hon. Yigal Mersel, International Legal Ethics Conference VII (“ILEC 2016”) (New York, NY July 14, 2015).
- 626. “Proportionality in Discovery: Change to Rule 26(b)(1) – Sea Change or Minor Tweak?,” with Andrea D’Ambra and Brian Corbin, Today’s General Counsel Institute: The Exchange eDiscovery (New York, NY July 18, 2016).
- 627. “Developments in Search,” with Andrea D’Ambra, Krista Fuller, David Grant, Chuck Kellner, and Lee McCallister, Today’s General Counsel Institute: The Exchange eDiscovery (New York, NY July 18, 2016).
- 628. “Litigation Technology: Meeting the Changing Landscape,” with Thomas C. Gricks III, Scott Reents, and Thomas Seymour, at Bloomberg Big Law Business Conference on Taking Control of Corporate Discovery: What It Means for Outside Counsel (New York, NY July 21, 2016).
- 629. “Legal Ethics and Artificial Intelligence: Is It Time to Regulate AI?,” with John Barkett, Wendy Wen Yun Chang, and Ed Walters, Bloomberg BNA Webinar (Aug. 25, 2016).
- 630. “Judge Scheindlin: Looking Back, Looking Ahead,” Keynote Address with Hon. Shira A. Scheindlin, 2016 Conference on Preservation Excellence (“PREX16”) (Portland, OR Sept. 14, 2016).
- 631. “Preservation and Privacy – Beyond Safe Harbor,” with Woods Abbott, Hon. Andrew J. Peck, and Jeane A. Thomas, 2016 Conference on Preservation Excellence (“PREX16”) (Portland, OR Sept. 15, 2016).
- 632. “Amendments to the Federal Rules of Civil Procedure and Their Impact on eDiscovery – The First Year,” with Thomas Y. Allman and Ariana J. Tadler, Practicing Law Institute’s (“PLI’s”) Electronic Discovery Institute 2016: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 19, 2016).
- 633. “eDiscovery and Information Governance in Office 365,” with John P. Collins, DTI Global Lunch Seminar (New York, NY Sept. 20, 2016).
- 634. “Technology 2020 and Case Study on ‘Possession, Custody, and Control’: What ESI Does Your Client ‘Control’ in Today’s Digital World?,” with Kevin F. Brady, Hon. John M. Facciola, Jason L. Lichtman, Hon. Andrew J. Peck, and Paul Weiner, Sandpiper Partners Third Annual Innovation in E-Discovery Conference (New York, NY Sept. 28, 2016).
- 635. “Preservation, Production, and Sanctions Under the New Rules: Developing New Techniques Early in the Matter to Avoid Costly Missteps,” with Kevin F. Brady, Nicole Eichberger, Hon. James C. Francis,

- IV, Henry J. Kelston, David J. Lender, Hon. Frank Maas, Karin Scholz Jenson, and Kiriaki Tourikis, Sandpiper Partners Third Annual Innovation in E-Discovery Conference (New York, NY Sept. 28, 2016).
636. “Cross-Border Data Protection, Data Security, Privacy: Top of Agenda,” with Hon. Joseph A. Dickson, Nicole Eichberger, David J. Lender, Hon. Andrew J. Peck, David C. Shonka, and Kelli J. Stenstrom, Sandpiper Partners Third Annual Innovation in E-Discovery Conference (New York, NY Sept. 28, 2016).
637. “What Does Attorney Competence Mean When It Comes to Handling Electronic Discovery?,” with Anthony Harwood, Hon. Ronald J. Hedges, and Scott Reents, New York State Bar Association Program on Legal Ethics in the Digital Age (New York, NY Sept. 29, 2016).
638. “The Do’s and Don’ts of Attorney Social Media Use and Advice,” with Michael Fox, Ignatius Grande, and Scott Malouf, New York State Bar Association Program on Legal Ethics in the Digital Age (New York, NY Sept. 29, 2016).
639. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Sept. 29, 2016).
640. “Mock Hearing on Technology-Assisted Review,” with Lea Malani Bayes and Hon. Andrew J. Peck, National eDiscovery Leadership Institute at the University of Missouri-Kansas City School of Law (Kansas City, MO Oct. 21, 2016).
641. “Search Syntax – Dispelling Myths About Keyword Search,” with Kathryn J. Manning and Crystal O’Donnell, Ontario Bar Association and Law Society of Upper Canada 2016 Ontario eDiscovery Institute (Toronto, ON Oct. 25, 2016).
642. “Machine Learning – When and How to Use It,” with Scott Hunter and Kathryn J. Manning, Ontario Bar Association and Law Society of Upper Canada 2016 Ontario Bar Association eDiscovery Institute (Toronto, ON Oct. 25, 2016).
643. “Fundamentals of Technology-Assisted Review and Federal Rule of Evidence 502,” Guest Lecture at Judge Thomas I. Vanaskie’s Electronic Evidence Course at Penn State Dickson Law School (Oct. 27, 2016).
644. “Competence and Supervision Issues Arising Out of Electronic Information,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Amy Walker Wagner, The Ethics of Electronic Information: Competence, Confidentiality, and Other Ethical Conundrums, Practicing Law Institute (“PLI”) Continuing Legal Education (“CLE”) Program (New York, NY Nov. 2, 2016).
645. “Protecting Attorney-Client Privilege, Work Product, and Client Confidences When Working with Electronic Information,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Amy Walker Wagner, The Ethics of Electronic Information: Competence, Confidentiality, and Other Ethical Conundrums, Practicing Law Institute (“PLI”) Continuing Legal Education (“CLE”) Program (New York, NY Nov. 2, 2016).
646. “Ethical Implications of Social Media and Electronic Filing,” with Hon. Ronald J. Hedges, Shawndra G. Jones, and Amy Walker Wagner, The Ethics of Electronic Information: Competence, Confidentiality, and Other Ethical Conundrums, Practicing Law Institute (“PLI”) Continuing Legal Education (“CLE”) Program (New York, NY Nov. 2, 2016).

- 647. “TAR and Analytics Deep Dive for Lawyers,” Technology in Practice 2016 (Toronto, Canada Nov. 3, 2016).
- 648. “TAR 2.0 – The Art of Concurrent Workflows,” with Yvette Bula and Peter Sanford, Technology in Practice 2016 (Toronto, Canada Nov. 3, 2016).
- 649. “The Prodigal Son – How Law Firms are Regaining Control of Document Review,” with Jessica Lockett, Sean Lynch, and Daniel Nyman, Technology in Practice 2016 (Toronto, Canada Nov. 4, 2016).
- 650. “The Use of Advanced Analytics and Technology-Assisted Review in Government Investigations and Litigation,” with Patrick McCulloch and Glenn Melcher, Deloitte Government eDiscovery Think Tank (Rosslyn, VA Nov. 9, 2016).
- 651. “Technology-Assisted Review: Fact or Fiction?,” at the Washington DC Bar Association eDiscovery and Information Governance Committee Meeting (Washington, DC Nov. 9, 2016).
- 652. “An Overview of the Custodian Tracking System (CTS) and eDiscovery Playbook at ConocoPhillips,” with Sheldon M. Patterson, George R. Pawloski, Mirna Sirbegovic, and Michael S. Stinson, Presentation for the Legal Department at ConocoPhillips (Houston, TX Nov. 10, 2016).
- 653. “TREC 2016 Total Recall Track Overview,” National Institute of Standards and Technology (“NIST”) 2016 Text REtrieval Conference (“TREC”) (Gaithersburg, MD Nov. 16, 2016).
- 654. “Big Data and New Technology: Implications for the Ethical Practice of Law,” with Luis J. Diaz, David H. Schwartz, and Mark S. Sidoti, Gibbons Tenth Annual E-Discovery and Ethics Conference (Orange, NJ Nov. 18, 2016).
- 655. “Technology-Assisted Review: Fact or Fiction?,” Guest Lecture at Gordon V. Cormack’s Designing Functional Programs (Advanced Version) Course at the David R. Cheriton School of Computer Science at the University of Waterloo (Waterloo, ON Dec. 1, 2016).
- 656. “Rule 26(b)(1): How to Make a Persuasive Proportionality Argument,” with Hon. Joy Flowers Conti and Michael Hamilton, Exterro Webinar for eDiscovery Day 2016 (Dec. 1, 2016).
- 657. “Technology-Assisted Review: Fact or Fiction?,” Arizona State University (“ASU”) – Arkfeld Legal Analytics and Big Data Workshop (Phoenix, AZ Dec. 8, 2016).
- 658. “Fundamentals of Electronic Discovery,” U.S. DOJ Tax Division eDiscovery Training Program (Washington, DC Dec. 12, 2016).
- 659. “Fundamentals of Search,” U.S. DOJ Tax Division eDiscovery Training Program (Washington, DC Dec. 13, 2016).
- 660. “Technology-Assisted Review: Plain and Simple,” Deloitte Government Continuing Legal Education (“CLE”) Program (Rosslyn, VA Dec. 14, 2016).

2015 TALKS

- 661. “The Ethics of Social Media: What Attorneys May and May Not Do,” with Hon. Ronald J. Hedges, Federal Bar Association Webinar (Jan. 7, 2015).

- 662. “Ethical Considerations in E-Discovery,” with Hon Ronald J. Hedges, Guest Lecture at Hon. Ronald J. Hedges’ E-Discovery (Electronically Stored Information—ESI) Course at the Mississippi College School of Law (Jan. 13, 2015).
- 663. “Privilege and Work Product in E-Discovery,” with Hon. Ronald J. Hedges, Guest Lecture at Hon. Ronald J. Hedges’ E-Discovery (Electronically Stored Information—ESI) Course at the Mississippi College School of Law (Jan. 13, 2015).
- 664. “How Do I Bring Value to My Organization . . . and Continue to Elevate and Accelerate My Career?,” with Dera J. Nevin, 2015 Kick-Off of the Cowen Group Leadership Breakfast Roundtable Series (New York, NY Jan. 15, 2015).
- 665. “Preservation Case Law – Judges and Experts Evaluate the Top Five Opinions of 2014,” with Michael Arkfeld, William P. Butterfield, Hon. James C. Frances IV, Hon. Ronald J. Hedges, and Hon. Frank S. Maas,” Legal Hold Pro / Zapproved, Inc. Super Session at LegalTech New York 2015 (New York, NY Feb. 3, 2015).
- 666. “Taking TAR to the Next Level: Recent Research and the Promise of Continuous Active Learning,” with Gordon V. Cormack, Susan Nielsen Hammond, Hon. Andrew J. Peck, and John Tredennick, Catalyst Repository Systems Plenary Session at LegalTech New York 2015 (New York, NY Feb. 3, 2015).
- 667. “In Search of the Right Search: Keywords, Manual Review, or Technology-Assisted Review (a.k.a. Predictive Coding)?,” Guest Lecture at William P. Butterfield and Allison Stanton’s eDiscovery Course at American Law School (Washington, DC Feb. 10, 2015).
- 668. “A User’s Guide to Technology-Assisted Review Using The Sauce,” with Gordon V. Cormack, Wachtell, Lipton, Rosen & Katz Continuing Legal Education (“CLE”) Program (New York, NY Feb. 11, 2015).
- 669. “A Paralegal’s Guide to Technology-Assisted Review Using The Sauce,” with Gordon V. Cormack, Wachtell, Lipton, Rosen & Katz Training Program (New York, NY Feb. 12, 2015).
- 670. “E-Discovery: Sanctions and Spoliation – What a Judge Needs to Know,” with Hon. Daniel Crothers and Hon. Thomas Zonay, National Judicial College / Institute for the Advancement of the American Legal System Webcast (Feb. 18, 2015).
- 671. “Technology-Assisted Review, Especially Predictive Coding,” Guest Interview for Michael Carbone and Allison Walton’s eDiscovery Skills Course at the UC Hastings College of the Law (Feb. 24, 2015).
- 672. “ESI and White Collar Cases: Compliance Strategies, Corporate Governance, and Ethics,” with Hon. James C. Frances IV, Hon. Ronald J. Hedges, Howard Bruce Klein, and Justin P. Murphy, American Law Institute Continuing Legal Education (“ALI CLE”) Live Videocast Program” (Philadelphia, PA Feb. 26, 2015).
- 673. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY March 5, 2015).
- 674. “Keynote Address: Welcome to Tomorrow,” with Hon. Shira A Scheindlin and Joy Allen Woller, Fourth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference: Know the Law, Know the Technology (Tempe, AZ March 11, 2015).

- 675. “I Feel the Need, the Need for Speed (TAR),” with Hon. John M. Facciola, Scott A. Kane, Ariana J. Tadler, and John Tredennick, Fourth Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference: Know the Law, Know the Technology (Tempe, AZ March 11, 2015).
- 676. “Technology-Assisted Review (TAR) for (Almost) Any Case,” with Thomas C. Gricks, III and Jeane Thomas, The Ninth Annual The Sedona Conference Institute (“TSCI”) Program on eDiscovery: Staying Ahead of the eDiscovery Curve and Keeping Pace With the New Rules (Nashville, TN March 19, 2015).
- 677. “The 2015 eDiscovery Judicial Roundtable,” with Hon. Joe B. Brown, Hon. William C. Koch, Hon. Kristin L. Mix, and Hon. Andrew J. Peck, The Ninth Annual The Sedona Conference Institute (“TSCI”) Program on eDiscovery: Staying Ahead of the eDiscovery Curve and Keeping Pace With the New Rules (Nashville, TN March 20, 2015).
- 678. “Scope and Limits of Government Investigations of Data Breaches,” with Christopher Cole, Samantha Green, Deborah Morris, and Allison Stanton, Government Investigations 2015: Electronic Information in Investigation and Response, Practicing Law Institute (“PLI”) (New York, NY March 23, 2015).
- 679. “Responding to Government Investigations and Handling Parallel Proceedings,” with Celeste Chase, John Einstman, Manfred J. Gabriel, Anthony Galioto, Ignatius A. Grande, Tracy Greer, Joseph P. Guglielmo, and Jeane A. Thomas, Government Investigations 2015: Electronic Information in Investigation and Response, Practicing Law Institute (“PLI”) (New York, NY March 23, 2015).
- 680. “Breaking Bad in the Digital Age: Ethics and Social Media,” Wachtell, Lipton, Rosen & Katz Continuing Legal Education (“CLE”) Program for Attorneys (New York, NY Apr. 8, 2015).
- 681. “Fundamentals of Technology-Assisted Review Using Predictive Coding,” Clear Law Institute Continuing Legal Education (“CLE”) Webinar (Apr. 14, 2015).
- 682. “Breaking Bad in the Digital Age: Ethics and Social Media,” Wachtell, Lipton, Rosen & Katz Continuing Legal Education (“CLE”) Program for Paralegals (New York, NY Apr. 22, 2015).
- 683. “Judicial Roundtable on eDiscovery,” with Hon. Hildy Bowbeer, Hon. Terrence P. Kemp, Hon. Andrew J. Peck, Hon. Irma C. Ramirez, Hon. Lee Rosenthal, and Hon. Craig Shaffer, The Sedona Conference Working Group 1 Mid-Year Meeting (Dallas, TX April 30, 2015).
- 684. “The 2015 Judicial Roundtable: A Judicial Perspective on eDiscovery,” with Hon. John M. Facciola, Hon. Paul S. Grewal, and Hon. Frank S. Maas, Deloitte Government Symposium (Washington, DC May 21, 2015).
- 685. “‘Meet and Confer’ Demonstrations,” with Craig D. Ball, Hon. John M. Facciola, and Thomas O’Connor, Georgetown eDiscovery Training Academy (Washington, DC May 31, 2015).
- 686. “Technology-Assisted Review and Enhanced Search,” Georgetown eDiscovery Training Academy (Washington, DC June 2, 2015).
- 687. “The Collections Process,” with Mark S. Sidoti, Georgetown eDiscovery Training

Academy (Washington, DC June 3, 2015).

- 688. “Mock 26(f) Conferences,” with Hon. Nan R. Nolan, Georgetown eDiscovery Training Academy (Washington, DC June 5, 2015).
- 689. “Ethics and Social Media: What Every Attorney Should Know,” Clear Law Institute Continuing Legal Education (“CLE”) Webinar (June 11, 2015).
- 690. “Ethics and Social Media: What Attorneys Need to Know,” Bloomberg BNA Webinar (July 9, 2015).
- 691. “Taking TAR to the Next Level: Recent Research and the Promise of Continuous Active Learning,” with Gordon V. Cormack, Erin E. Harrison, Emi Ohira, and John Tredennick, Catalyst Repository Systems Plenary Session at Legaltech West Coast 2015 (San Francisco, CA July 13, 2015).
- 692. “Introduction to the Third Edition of Electronic Discovery and Digital Evidence,” with Daniel Capra, Hon. Shira A. Scheindlin, and Kenneth J. Withers, Sedona Conference Webinar (July 14, 2015).
- 693. “Machine-Learning Protocols for Technology-Assisted Review in eDiscovery,” at Google with Gordon V. Cormack (July 15, 2015).
- 694. “The Practical Implications of the Proposed Federal Rules of Civil Procedure (“FRCP”) Amendments (Effective December 1, 2015),” with Robert D. Brownstone, Wendy Butler Curtis, Scott Kessler, and Gina Trimarco, Today’s General Counsel and Institute “The Exchange” eDiscovery for the Corporate Market Program (New York, NY July 20, 2015).
- 695. “E-Discovery in Investigations: A Different Context,” with Taylor Hoffman, Farrah Pepper, James A. Sherer, Robert E. Singleton, and Amie Taal, Today’s General Counsel and Institute “The Exchange” eDiscovery for the Corporate Market Program (New York, NY July 20, 2015).
- 696. “Developments in Search,” with David Grant, Andre Guilbeau, Chuck Kellner, Thomas O’Connor, and Robert E. Singleton, Today’s General Counsel and Institute “The Exchange” eDiscovery for the Corporate Market Program (New York, NY July 20, 2015).
- 697. “Data Review Process,” Practicing Law Institute (“PLI”) Nuts and Bolts of Electronic Discovery 2015 Program (New York and Live Webcast Sept. 1, 2015).
- 698. “Technology-Assisted Review: Where Are We and Where Are We Going?,” with Gilbert S. Keteltas, Practicing Law Institute (“PLI”) Electronic Discovery Institute 2015: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 2, 2015).
- 699. “Fundamentals of Technology-Assisted Review,” Guest Lecture at Judge Thomas I. Vanaskie’s Electronic Evidence Class at Penn State Law and Penn State – Dickson Law Schools (Carlisle, PA Sept. 24, 2015).
- 700. “Successful Discovery Strategies,” with Brian Chebli, Erica Devila, Dera J. Nevin, and Denise Scofield, at JPMorgan Chase Law Firm Discovery Liaison Training Day (New York, NY Sept. 28, 2015).
- 701. “Fundamentals of Electronic Discovery for New Associates,” with Claudia T. Morgan and Luis A. McNish, Wachtell, Lipton, Rosen & Katz New Associate Training Program (New York, NY Sept. 29, 2015).

- 702. “Trending Now: #Ethics, #Social Media, #eDiscovery, #Competence, and #Cloud Computing,” Deloitte Government Continuing Legal Education (“CLE”) Program (Arlington, VA Oct. 14, 2015).
- 703. “2015 Amendments to the Federal Rules of Civil Procedure: Judicial Discussion of eDiscovery Implications,” with Hon. Sheila Finnegan, Hon. Nan R. Nolan, Hon. Craig B. Shaffer, and Hon. Amy J. St. Eve, Seventh Circuit Pilot Project Webinar (Chicago, IL Oct. 14, 2015).
- 704. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Oct. 15, 2015).
- 705. “Technology-Assisted Review in eDiscovery,” with Philip J. Favro and Ariana J. Tadler, at Benjamin N. Cardozo Data Law Initiative (“CDLI”) Lunch Speakers Series (New York, NY Oct. 19, 2015).
- 706. “Fundamentals of Electronic Discovery for New Associates,” with Claudia T. Morgan and Luis A. McNish, Wachtell, Lipton, Rosen & Katz New Associate Training Program I (New York, NY Oct. 20, 2015).
- 707. “Technology-Assisted Review for Electronic Discovery,” Guest Speaker at Kathryn Hume’s Legal Practice – Legal Technology Course at the University of Calgary Faculty of Law (Oct. 26, 2015).
- 708. “Is Electronic Discovery Dead?,” Keynote Address at the Ontario Bar Association 2015 eDiscovery Institute (Toronto, Canada Oct. 29, 2015).
- 709. “Inverting the Pyramid: Non-Linear Approaches to Document Review as the New Standard,” with Yvette Bula, Marlon Hylton, and Crystal O’Donnell, Commonwealth Legal / A Division of Ricoh Canada Inc. Technology in Practice 2015 Conference (Toronto, Canada Nov. 5, 2015).
- 710. “The Ethical Implications of Electronically Stored Information,” with Hon. Ronald J. Hedges and Amy Walker Wagner, American Law Institute Continuing Legal Education (“ALI CLE”) Program (Philadelphia, PA Nov. 10, 2015).
- 711. “TREC 2015 Total Recall Track Overview Talk,” with Adam Roegiest (Gaithersburg, MD Nov. 18, 2015).
- 712. “Getting Stuck in TAR: Arguing the Big Issues Surrounding Predictive Coding,” with David Cohen, Thomas C. Gricks, III, Chuck Kellner, and Hon. Andrew J. Peck, The Twelfth Georgetown University Law Center Advanced eDiscovery Institute (Washington, DC Nov. 19, 2015).
- 713. “TREC 2015 Total Recall Plenary Session,” with Gordon V. Cormack, Ralph C. Losey, Mihai Lupu, Jeremy Pickens, and Hoatian Zhang (Gaithersburg, MD Nov. 20, 2015).
- 714. “A Change for the Better?: The 2015 Amendments to the Federal Rules of Civil Procedure Part I (Rules 26(d)(2), 34(b)(2)(B), 34(b)(2)(C), and 37(e),” with Michael Arkfeld, Hon. James C. Francis IV, and Hon. Shira A Scheindlin, LexisNexis University On- Demand Continuing Legal Education (“CLE”) Program (New York, NY Nov. 24, 2015).

- 715. “A Change for the Better?: The 2015 Amendments to the Federal Rules of Civil Procedure Part II (Rules 1, 4(m), 16(b), 26(b)(1), 26(c)(1), and 26(f),” with Michael Arkfeld, Hon. James C. Francis IV, and Hon. Shira A. Scheindlin, LexisNexis University On- Demand Continuing Legal Education (“CLE”) Program (New York, NY Nov. 24, 2015).
- 716. “Legal Hold Orders: What’s New and What’s Not,” for the Litigation Services Group at ConocoPhillips (Houston, TX Dec. 1, 2015).
- 717. “Applying Your Computer Science Skills to Real World Applications,” Guest Lecture at two sections of Gordon V. Cormack’s Elementary Algorithm Design and Data Abstraction Course at the David R. Cheriton School of Computer Science, University of Waterloo (Waterloo, ON Dec. 3, 2015).
- 718. “2015 eDiscovery Update: Trends and Developments Under the FRCP and Beyond,” with Hon. James C. Francis IV, Hon. Ronald J. Hedges, and Jeane A. Thomas, American Law Institute Continuing Legal Education (“ALI CLE”) Webinar (Dec. 8, 2015).
- 719. “How Will New Rule 26(b)(1) and Proportionality Impact Search and the Use of Search Terms?,” with Hon. Joy Flowers Conti, Karin Scholz Jensen, David J. Kessler, Hon. Andrew J. Peck, and Kiriaki Tourikis, Sandpiper Partners Second Annual Conference on Innovation in eDiscovery (New York, NY Dec. 9, 2015).
- 720. “An Overview of the 2015 Amendments to the Federal Rules of Civil Procedure,” Continuing Legal Education (“CLE”) Program for the Legal Discovery Management and Litigation Groups at JPMorgan Chase & Co. (New York, NY Dec. 22, 2015).

2014 TALKS

- 721. “TAR Best Practices: Tools, Techniques, and Validation Methods,” with Gordon V. Cormack, Deloitte Discovery Continuing Legal Education (“CLE”) Program for Government Attorneys (Washington, DC Jan. 15, 2014).
- 722. “Doing It Right: Combining Technology and Cooperation in eDiscovery,” with Conor R. Crowley, David S. Leone, Ronni Solomon, and Ariana J. Tadler, Daegis Educational Session: eDiscovery Track at LegalTech New York 2014 (New York, NY Feb. 4, 2014).
- 723. “The Evolution, Uses, and Case Studies of Technology-Assisted Review,” with Eric Crespolini, Anthony Diana, and Hon. David J. Waxse, HP Autonomy Educational Session: Information Governance Track at LegalTech New York 2014 (New York, NY Feb. 4, 2014).
- 724. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Feb. 20, 2014).
- 725. “A.I. (‘Artificial Intelligence’) Enhanced Review,” with Hon. Joy Conti, Jon Lavinder, Johnny G. Lee, Ralph C. Losey, and Hon. David J. Waxse, eDiscovery Intelligence’s eDiscovery Project Management 2014 (Atlanta, GA Feb. 27, 2014).
- 726. “eDiscovery in Government and Regulatory Investigations,” with Elizabeth J. Campbell and Ronni Solomon, eDiscovery Intelligence’s eDiscovery Project Management 2014 (Atlanta, GA Feb. 27, 2014).

- 727. “Judicial Roundtable,” with Hon. Ralph Artigliere, Hon. John Carroll, Hon. Joy Conti, and Hon David J. Waxse, eDiscovery Intelligence’s eDiscovery Project Management 2014 (Atlanta, GA Feb. 27, 2014).
- 728. “eDiscovery From the Perspective of the Client, Plaintiff’s Counsel, and the Bench,” with Wayne C. Matus, Hon. Nan R. Nolan, and Ariana J. Tadler, Wachtell Lipton Rosen & Katz Continuing Legal Education (“CLE”) Program (New York, NY Mar. 5, 2014).
- 729. “Keynote Address on the Hottest Topics in eDiscovery” with Hon. Shira A. Scheindlin, at the Third Annual eDiscovery and Digital Evidence Conference: Essential Skills and Cutting-Edge Strategies, Sponsored by the Center for Law, Science & Innovation at the Sandra Day O’Connor College of Law in Collaboration with Michael Arkfeld (Tempe AZ Mar. 12, 2014).
- 730. “Technology-Assisted Review,” with Jason R. Baron, Jerone J. English, Hon. Andrew J. Peck, Paul E. Burns and Eric J. Schwartz, The 8th Annual Sedona Conference Institute eDiscovery (“TSCI”) Program (Houston, TX Mar. 13, 2014).
- 731. “Managing the eDiscovery Process / Making the Business Case for eDiscovery,” with Gavin Manes, Robert D. Owen, Hon. Andrew J. Peck, and Kenneth Prine, The 8th Annual Sedona Conference Institute (“TSCI”) Program (Houston, TX Mar. 13, 2014).
- 732. “Fundamentals of Technology-Assisted Review I,” for the New Mexico Chapter of the Federal Bar Association (Albuquerque, NM Mar. 19, 2014).
- 733. “Fundamentals of Technology-Assisted Review II,” for the New Mexico Chapter of the Federal Bar Association (Albuquerque, NM Mar. 19, 2014).
- 734. “Responding to a Government Investigation,” with Manfred J. Gabriel, Peter C. Harvey, Jeane A. Thomas, and Michelangelo Troisi, Practicing Law Institute (“PLI”) Program on Government Investigations 2014: The Role of Electronic Information in Investigation and Response (New York, NY Mar. 24, 2014).
- 735. “The Sedona Conference Webinar on the Latest Commentaries on Search of ESI and Achieving Quality in the eDiscovery Process,” with Jason R. Baron, Hon. James C. Francis IV, and Jeffrey C. Sharer, The Sedona Conference Voices From the Dessert Webinar Series (Mar. 27, 2014).
- 736. “Technology Flashpoints: TAR, Data Protection, and Dispute Resolution,” with Linda Clark, John M. Barkett, and Al Saikali, 16th Annual American Bar Association (“ABA”) Section of Dispute Resolution 2014 Spring Conference (Miami, FL Apr. 3, 2014).
- 737. “Introduction to International Electronic Discovery, Data Privacy, and Cross-Border Transfers: From Aerospatiale to Now,” with Hon. Elizabeth D. Laporte, Hon. Richard A. Kramer, David Shonka, and Kenneth J. Withers, The Sedona Conference Institute (“TSCI”) Program on Cross-Border Discovery and Data Protection Laws (San Francisco, CA Apr. 9, 2014).
- 738. “Predictive Coding on Trial,” with Paul E. Burns, Jerone J. English, and Hon. Craig Shaffer, American Bar Association (“ABA”) Section on Litigation Continuing Legal Education (“CLE”) Program (Scottsdale, AZ Apr. 10, 2014).
- 739. “Technology-Assisted Review at Wachtell, Lipton, Rosen & Katz,” with Gordon V. Cormack, Training Program for the Automated Litigation Support (“ALS”) Department at Wachtell, Lipton, Rosen & Katz

(Apr. 24, 2014).

- 740. “Technology-Assisted Review (a.k.a. Predictive Coding) and Other E-Discovery Search Issues,” with Hon. Andrew J. Peck, Federal Judicial Center (“FJC”) National Workshop for Magistrate Judges I (San Antonio, TX May 1, 2014).
- 741. “Defending the eDiscovery Process: Burdens, Standards, and Best Practices,” with Sandra Rampersaud, Scott Reents, Brendan M. Schulman, and Hon. Craig B. Shaffer The Sedona Conference Working Group 1 Mid-Year Meeting (Miami, FL May 8-9, 2014).
- 742. “In Search of the Right Search: Keywords, Manual Review, or Technology-Assisted Review,” with Hon. Sheila Finnegan, Niloy Ray, and Hon. Geraldine Soat Brown, Seventh Circuit Bar Association 63rd Annual Meeting and Conference (Chicago, IL May 12, 2014).
- 743. “A Conversation with Judges Allegra, Anderson, Facciola and Maas on the Hottest Topics in eDiscovery,” with Hon. Francis M. Allegra, Hon. John F. Anderson, Hon. John M. Facciola, and Hon. Frank Maas, Deloitte Electronic Discovery Symposium for Government Agencies: Innovation and eDiscovery (Washington, DC May 15, 2014).
- 744. “Something Just Isn’t Right Here: Challenging and Defending the eDiscovery Process,” with Jason R. Baron, Conor R. Crowley, and Hon. Andrew J. Peck, Eighth Annual American Bar Association (“ABA”) National Institute on e Discovery (New York, NY May 16, 2014).
- 745. “‘Meet and Confer’ Demonstrations,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 1, 2014).
- 746. “Realizing Your Goals for the Academy,” with Craig Ball, Hon. John M. Facciola, and Tom O’Connor, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 1, 2014).
- 747. “Technology-Assisted Review and Enhanced Search,” 2014 Georgetown eDiscovery Training Academy (Washington, DC June 3, 2014).
- 748. “The Courts and Predictive Coding: Where They Are and Where They Are Going,” with Craig Ball, Hon. John M. Facciola, and Mark S. Sidoti, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 3, 2014).
- 749. “The Collections Process,” with Mark S. Sidoti, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 4, 2014).
- 750. “Ethics,” with Craig Ball, Hon. John M. Facciola and Mark S. Sidoti, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 4, 2014).
- 751. “Anticipating the Future, with Craig Ball, Hon. John M. Facciola, and Mark S. Sidoti, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 4, 2014).
- 752. “Privacy,” with Craig Ball, John M. Facciola, Tom O’Connor, and Mark S. Sidoti, 2014 Georgetown eDiscovery Training Academy (Washington, DC June 5, 2014).
- 753. “Fundamentals of E-Discovery for State Court Judges,” with Hon. Daniel Crothers and Hon. Thomas Zonay, National Judicial College / Institute for the Advancement of the American Legal System Webcast (June 11, 2014).

- 754. “Technology and Litigation: What Is Really Happening in E-Discovery and What Will the Future Look Like,” with Dean David F. Levi, Francis McGovern, Hon. Lee Rosenthal, Ian Wilson, and Jun Yang, Master of Judicial Studies Program Judges’ Seminar, Duke University School of Law Center for Judicial Studies (Durham, NC June 13, 2014).
- 755. “Predictive Coding: Trends and Challenges,” with Jay Leib, Martha Louks, Constantine Pappas, Karl Schieneman, and Geoffrey A. Vance, McDermott Will & Emery 2014 Technology in the Law Symposium – Big Data: Transforming Costly Chaos into Valuable Intelligence (Chicago, IL June 19, 2014).
- 756. “Evaluation of Machine-Learning Protocols for Technology-Assisted Review in Electronic Discovery,” with Gordon V. Cormack, SIGIR ’14 (Gold Coast, Queensland, Australia July 8, 2014).
- 757. “Technology-Assisted Review (a.k.a. Predictive Coding) and Other E-Discovery Search Issues,” with Hon. Andrew J. Peck, Federal Judicial Center (“FJC”) National Workshop for Magistrate Judges II (Philadelphia, PA July 24, 2014).
- 758. “Building an Enlightened Legal Hold Plan,” with Craig Ball, David Cohen, Hon. Frank Maas, and Dawn Radcliffe, Third Annual Conference on Preservation Excellence (“PREX-14”), Sponsored by LegalHold Pro (Portland, OR Sept. 10, 2014).
- 759. “Addressing the Cost of Preservation,” with Craig Ball, Brad Ellis, Tony Knappen, and Charlotte Riser-Harris, Third Annual Conference on Preservation Excellence (“PREX-14”), Sponsored by LegalHold Pro (Portland, OR Sept. 10, 2014).
- 760. “Legal Holds Without Borders,” with Hon. Paul Grewal, Dawn Radcliffe, and Jeane Thomas, Third Annual Conference on Preservation Excellence (“PREX-14”), Sponsored by LegalHold Pro (Portland, OR Sept. 10, 2014).
- 761. “Search and Review” with Heather Caputo, Jerone J. English, Hon. James C. Francis IV, Kathryn (Kit) Goetz, Daniel Kulakofsky, Hon. Nan R. Nolan, Hon. Andrew J. Peck, and Hon. Craig B. Shaffer Electronic Discovery Institute Distance Learning Program (New York, NY Sept. 16, 2014).
- 762. “Fundamentals of Electronic Discovery for New Associates,” with Claudia T. Morgan and Luis A. McNish, Wachtell, Lipton Rosen & Katz New Associate Training Program I (New York, NY Sept. 16, 2014).
- 763. “Technology-Assisted Review: Opportunities and Challenges,” New York eDiscovery Counsel Round Table (New York, NY Sept. 18, 2014). [12:30 – 2:00 PM]
- 764. “E-Discovery: An Interactive Discussion of Advanced Search Technologies Including Technology-Assisted Review,” Institute on Complex Commercial Litigation at the Benjamin N. Cardozo School of Law at Yeshiva University (New York, NY Sept. 22, 2014).
- 765. “Technology-Assisted Review: Where We Are and Where Are We Going?,” with Gilbert S. Keteltas and Brian C. Rocca, Practicing Law Institute (“PLI”) Electronic Discovery Institute 2014: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 30, 2104).
- 766. “Fundamentals of Electronic Discovery,” Guest Lecturer at Karen Eltis’ Internet Law Course at the University of Ottawa Faculty of Law (October 6, 2014).

- 767. “Fundamentals of Electronic Discovery,” Guest Lecture at Brian Donnelly’s, Conrad A. Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Oct. 9, 2014).
- 768. “Technology-Assisted Review (“TAR”) Boot Camp,” with Gordon V. Cormack, Deloitte Discovery Program for Government Lawyers (Washington, DC Oct. 15, 2014).
- 769. “Predictive Coding: Trends and Challenges,” with Jay Leib, Martha Louks, Constantine Pappas, Karl Schieneman, and Geoffrey A. Vance, McDermott Will & Emery 2014 Technology in the Law Symposium – Big Data: Transforming Costly Chaos into Valuable Intelligence (Washington, DC Oct. 16, 2014).
- 770. “Fundamentals of Electronic Discovery for New Associates,” with Luis A. McNish, Wachtell, Lipton Rosen & Katz New Associate Training Program II (New York, NY Oct. 23, 2014).
- 771. “Beyond the Basics: Getting Started with Technology-Assisted Review,” with Craig Ball, Gordon V. Cormack, Hon. Craig B. Shaffer, and Ariana J. Tadler, American Law Institute Continuing Legal Education (“ALI CLE”) Webinar (Oct. 24, 2014).
- 772. “Disputes Involving Technology-Assisted Review (‘TAR’) or Predictive Coding,” with David Deppe, Gene Eames, Thomas C. Gricks, III, and Hon. Andrew J. Peck, Sandpiper Partners Innovation in eDiscovery Conference (New York, NY Oct. 29, 2014).
- 773. “The Judicial Roundtable,” with Hon. John M. Facciola, Hon. James L. Gale, Hon. Frank Maas, Hon. Kristin L. Mix, Hon. Andrew Peck, Hon. Xavier Rodriguez, and Hon. Karla Spaulding, The Sedona Conference “All Voices” and Working Group 1 Annual Meeting (New Orleans, LA Nov. 6, 2014).
- 774. “Approaches to Validating TAR Efforts,” with Gordon V. Cormack, Bruce Hedin, and David D. Lewis, The Sedona Conference “All Voices” and Working Group 1 Annual Meeting (New Orleans, LA Nov. 6, 2014).
- 775. “A Tour of TAR: Technologies, Workflows, and Case Law,” with Annika K. Martin, Hon. Andrew J. Peck, and Carmen M. Rodriguez, The Sedona Conference “All Voices” and Working Group 1 Annual Meeting (New Orleans, LA Nov. 7, 2014).
- 776. “The Judicial Roundtable,” with Hon. Joy Conti, Hon. Herbert L. Dixon, Hon. John M. Facciola, Hon. James C. Francis IV, Hon. Paul Grewal, Hon. Frank Maas, Hon. Kristin L. Mix, Hon. Andrew J. Peck, Hon. Xavier Rodriguez, Hon. Craig B. Shaffer, and Hon. David J. Waxse, The 11th Annual Georgetown Advanced eDiscovery Institute (Tyson’s Corner, VA Nov. 20-21, 2014).
- 777. “eDiscovery: Update on Trends and Developments Under the FRCP and Beyond” with Hon. James C. Francis IV, Hon. Ronald J. Hedges, Jeane A. Thomas, American Law Institute Continuing Legal Education (“ALI CLE”) Live Videocast Program (Philadelphia, PA Dec. 2, 2014).
- 778. “In Search of the Right Search: Keywords, Manual Review, or Technology-Assisted Review (a.k.a. Predictive Coding)?,” Guest Lecturer at Craig Ball’s Electronic Discovery and Digital Evidence Course at the School of Law of the University of Texas at Austin (Dec. 3, 2014).

2013 TALKS

- 779. “2012 eDiscovery Wrap-Up: What Happened in 2012 and What Do We Expect in 2013?,” with Hon. Ronald J. Hedges and Jeane A. Thomas, Bloomberg BNA Webinar (Jan 15, 2013).
- 780. “Can a Computer Do It Better, Faster, and Cheaper—A Discussion of Technology-Assisted Review,” with Shannon Capone Kirk, Thomas C. Gricks III, Richard Marcus, and Hon. Andrew J. Peck, at the American Bar Association’s (“ABA’s”) eDiscovery and Digital Evidence (“EDDE”) 2013 eDiscovery and Information Governance National Institute at the Stetson University College of Law (Tampa FL Jan. 24, 2013).
- 781. “The Computer Says These Are All the Documents That Are Relevant—A Mock Hearing on Technology-Assisted Discovery Production,” with Hon. John M. Facciola, Thomas C. Gricks III, Hon. Paul W. Grimm, and Hon. Shira A. Scheindlin, at the American Bar Association’s (“ABA’s”) eDiscovery and Digital Evidence (“EDDE”) 2013 eDiscovery and Information Governance National Institute at the Stetson University College of Law (Tampa FL Jan. 24, 2013).
- 782. “E-Discovery and Ethics,” with John M. Barkett, Hon. Shira A. Scheindlin, and Ethan Wall, at the American Bar Association’s (“ABA’s”) eDiscovery and Digital Evidence (“EDDE”) 2013 eDiscovery and Information Governance National Institute at the Stetson University College of Law (Tampa FL Jan. 25, 2013).
- 783. “Statistical Sampling to Enhance and Defend Your E-Discovery Practice,” with Pallab Chakraborty, Gordon V. Cormack, Maureen O’Neill, and James K. Wagner Jr., SuperSession Panel at LegalTech 2013 New York (New York, NY Jan. 29, 2013).
- 784. “How Good is Your Predictive Coding Poker Face?,” with Craig Ball, Ralph Losey, and Matthew Nelson, SuperSession Panel at LegalTech 2013 New York (New York, NY Jan. 29, 2013).
- 785. “Meaning Based eDiscovery: Case Studies and Lessons Learned from the Use of Predictive Coding and Advanced Analytics,” with Thomas Lidbury, Jennifer Keadle Mason, George Tziahanas, and Alan Winchester, Plenary Session at LegalTech 2013 New York (New York, NY Jan. 30, 2013).
- 786. “The Grossman-Cormack Glossary of Technology-Assisted Review, with Foreword by John M. Facciola, U.S. Magistrate Judge,” ESIBytes Podcast with Gordon V. Cormack, Hon. John M. Facciola, and Karl Schieneman (Feb. 13, 2013).
- 787. “Fundamentals of eDiscovery,” with Jeremy R. Feinberg, Guest Lecture at Brian Donnelly’s, Conrad Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Feb. 14, 2013).
- 788. “Preview of the Second Annual Arizona State University (“ASU”) – Arkfeld eDiscovery and Digital Evidence Conference: Challenges Facing Those Who Want to Use Technology-Assisted Review,” with Michael R. Arkfeld, Hon. John M. Facciola, Joshua Gilliland, and Robert E. Singleton, Webinar (Feb. 19, 2013).
- 789. “eDiscovery and the Use of Predictive Coding: What Is It, How Does It Work, and Why Should Corporate Law Departments Use It?,” with Gordon V. Cormack and Jerone J. English, at the GULC Corporate Counsel Institute (Washington, DC Mar. 8, 2013).

- 790. “Part I: Are We All Stuck in TAR?,” with Mark Blaha, Matthew T. Clarke, and Scott A. Kane, eDiscovery and Digital Evidence Conference sponsored by the Center for Law, Science & Innovation at the Sandra Day O’Connor College of Law in Collaboration with Michael Arkfeld (Tempe AZ Mar. 14, 2013).
- 791. “Part II: TAR – Not as Sticky as it Appears,” with Mark Blaha, William P. Butterfield, and Matthew T. Clarke, eDiscovery and Digital Evidence Conference sponsored by the Center for Law, Science & Innovation at the Sandra Day O’Connor College of Law in Collaboration with Michael Arkfeld (Tempe AZ Mar. 14, 2013).
- 792. “Preservation and Discovery of ESI in Cloud-Based and Mobile Environments,” with Jerone J. English, Amor A. Esteban, and Eric P. Mandel, The 7th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Living on eDiscovery’s Cutting Edge (San Diego, CA Mar. 21, 2013).
- 793. “Technology-Assisted Review (‘TAR’): What, Why, When, and How,” with Paul E. Burns, Hon. James C. Francis IV, Kim-An Hernandez, Eric P. Mandel, and Sarah M. Padgitt, The 7th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Living on eDiscovery’s Cutting Edge (San Diego, CA Mar. 21, 2013).
- 794. “The Evolution and Future of the eDiscovery Team,” with Hon. James C. Francis IV, Colleen M. Kenney, Eric P. Mandel, and Sarah M. Padgitt, The 7th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Living on eDiscovery’s Cutting Edge (San Diego, CA Mar. 22, 2013).
- 795. “Ethics and the Use of Technology: “Technology-Assisted Review” as But One Example of a New Technology,” Guest Lecture at Jeremy Feinberg’s Professional Responsibility Course at Columbia Law School (New York, NY Mar. 27, 2013).
- 796. “The Ethics Game Show Matrimonial and Family Law Edition,” with Jeremy R. Feinberg, Nicole Hyland, Hon. Barbara Jaffe, and Wallace L. Larson, Jr., Practicing Law Institute (“PLI”) Program (New York, NY Mar. 28, 2013).
- 797. “‘Technology-Assisted Review’: What Is It, How Does It Work, and Why Should Corporate Law Departments Use It?,” Continuing Legal Education (“CLE”) Program at Gen Re (Stamford, CT Apr. 3, 2013).
- 798. “Government Investigations 2013: The Role of Electronic Information in Investigation and Response,” with Hon. John M. Facciola, Manfred Gabriel, Peter C. Harvey, Justin P. Murphy, and David C. Shonka, Practicing Law Institute (“PLI”) Program and Webcast (New York, NY Apr. 4, 2013).
- 799. “Choosing Your Technology: What Works Best, When and Why?,” with Daniel Kulakofsky, Cecil A. Lynn III, and Mark Risk, Seventh Annual American Bar Association (“ABA”) National Institute on E-Discovery (New York, NY Apr. 5, 2013).
- 800. “‘Technology-Assisted Review’: What Is It, How Does It Work, and Why Should Corporate Law Departments Use It?” at ConocoPhillips’ Global Attorneys Meeting (Houston, TX Apr. 9, 2013).
- 801. “‘Technology-Assisted Review’: What It Is, How It Works, and Why You Should Use It,” Guest Lecturer at Tanina Rostain’s and Roger Skalbeck’s Georgetown University Law Center Technology, Innovation,

and Law Practice Course (Washington, DC Apr. 10, 2013).

- 802. “TAR Briefing,” with Gordon V. Cormack, John Rabiej, John Rosenthal, and Ian Wilson, at the April Civil Rules Advisory Committee Meeting (Norman, OK Apr. 11, 2013).
- 803. “Technology-Assisted Review in Electronic Discovery,” with Marc Wolinsky, at the Wachtell, Lipton, Rosen & Katz New York Client Seminar (New York, NY Apr. 16, 2013).
- 804. “‘Technology-Assisted Review’: What Is it, How Does It Work, and Why Should You Use It?,” eDiscovery Update 2013 for New York State Agencies, Office of the Attorney General Legal Education and Professional Development (Albany, NY Apr. 17, 2013).
- 805. “Ethical Issues in eDiscovery, Protecting Privilege, Social Media, and Data Security/Cloud Computing,” eDiscovery Update 2013 for New York State Agencies, Office of the Attorney General Legal Education and Professional Development (Albany, NY Apr. 17, 2013).
- 806. “Panel 2: Opportunities Presented and Challenges Posed by Technology-Assisted Review,” with Edward H. Cooper, Hon. John M. Facciola, Henry Kelston, and John Rosenthal, Duke Law Bench-Bar Distinguished Lawyers Conference on Technology-Assisted Review: A Critical Analysis (Washington DC Apr. 19, 2012).
- 807. “Panel 3: What is a Reasonable Technology-Assisted Review Process or Protocol?,” with Jerone J. English, Hon. Paul W. Grimm, Thomas Metzloff, and John Rosenthal, Duke Law Bench-Bar Distinguished Lawyers Conference on Technology-Assisted Review: A Critical Analysis (Washington DC Apr. 19, 2012).
- 808. “Defense of Process: General Principles, and Culling, Search, and Review Principles,” with Sarah Jane Gillett, Matthew Hammond, Christopher Q. King, Dean Kuckelman, Brendan M. Schulman, and Scott Reents, at the TSC WG1 Mid-Year Meeting and Steering Committee Retreat (St. Louis, MO Apr. 24-26, 2013).
- 809. “The Challenge of ‘BYOD’ and ‘COPE’: What’s an Employer to Do?,” with Conor R. Crowley and Ronal J. Hedges, Bloomberg BNA Webinar (May 7, 2013).
- 810. “Legal Ethics and the Cloud,” with Jeremy R. Feinberg, Practising Law Institute’s (PLI’s) Cloud Computing 2013: Cut Through the Fluff and Tackle the Critical Stuff (New York, NY May 10, 2013).
- 811. “A Lunchtime Viewing of the Seventh Circuit Pilot Project’s Video of a Mock Meet-and-Confer Regarding Technology-Assisted Review, with Discussion,” with Jennifer Keadle Mason, U.S. District Court for the Western District of Pennsylvania (Pittsburgh, PA May 13, 2013).
- 812. “Panel I: eDiscovery Basics,” with Richard Marcus, Matthew Nelson, Jonathan Redgrave, and Allison Walton, at the Center for Negotiation and Dispute Resolution at the U.C. Hastings College of Law (San Francisco, CA May 16, 2013).
- 813. “Panel III: Using Technology,” with Jerone J. English, Matthew Nelson, Steven VanLiere, and Allison Walton, at the Center for Negotiation and Dispute Resolution at the U.C. Hastings College of Law (San Francisco, CA May 16, 2013).

- 814. “Judicial Roundtable: Expectations for Best Practices and Proportionality,” with Hon. Joy Conti, Hon. John M. Facciola, and Hon. Frank Maas, FC Business Intelligence Conference on eDiscovery Project Management (Pittsburgh, PA May 21, 2013).
- 815. “Friendly Fire at the Bar,” with Thomas C. Gricks, III and Paul D. Weiner, FC Business Intelligence Conference on eDiscovery Project Management (Pittsburgh, PA May 21, 2013).
- 816. “‘Technology-Assisted Review’: What It Is, How It Works, and Why Parties Should Use It,” with Britt M. Miller, Educational Program for the Magistrate and District Judges of the Northern District of Illinois (Chicago, Ill. May 29, 2013).
- 817. “The Evolving Law on Search Techniques and Protocols,” with Michael R. Arkfeld and Hon. John M. Facciola, Georgetown University Law Center eDiscovery Training Academy (Washington, DC June 5, 2013).
- 818. “Technology-Assisted Review and Enhanced Search,” Georgetown University eDiscovery Training Academy (Washington, DC June 5, 2013).
- 819. “Third-Party, International Discovery, Privileged ESI, and Non-Waiver Agreements,” with Michael R. Arkfeld and Hon. John M. Facciola, Georgetown University Law Center eDiscovery Training Academy (Washington, DC June 6, 2013).
- 820. “Faculty Roundtable: Putting the Judges on the Spot,” with Hon. John M. Facciola, Georgetown University Law Center eDiscovery Training Academy (Washington, DC June 7, 2013).
- 821. “Technology-Assisted Review – Emerging eDiscovery Tool: Leveraging TAR to Reduce the Time and Expense of eDiscovery,” Strafford Publications Webinar (June 26, 2013).
- 822. “Search Technologies and Forward Thinking,” with Richard Cohen and Hon. Andrew J. Peck, Today’s General Counsel Institute: eDiscovery for the Corporate Market (New York, NY July 17, 2013).
- 823. “21st Century Considerations: Data Security, Social Media, and the Cloud,” with Shawn Covard, Conor R. Crowley, and Cathy Story, Today’s General Counsel Institute: eDiscovery for the Corporate Market (New York, NY July 18, 2013).
- 824. “The What, Why, When, and How of Technology-Assisted Review (“TAR”),” with Steven Berrent, Emily Cobb, and Conor R. Crowley, The Sedona Conference Institute (“TSCI”) New York (New York, NY July 25, 2013).
- 825. “Judicial Roundtable” “Tell Us What You Think About . . . ,” with Hon. Timothy S. Driscoll, Hon. James C. Francis IV, Hon. John G. Koeltl, Hon. Frank Maas, Hon. Andrew J. Peck, Hon. Shira A. Scheindlin, and Hon. Margaret Smith, The Sedona Conference Institute (“TSCI”) New York (New York, NY July 25, 2013).
- 826. “Developments in Electronic Discovery: Proposed Rules, Preservation, and Technology-Assisted Review,” with Hon. David G. Campbell, Claire V. Eagan, and Hon. T. Lane Wilson, Tenth Circuit Judicial Conference, Session 1 of 2 (Colorado Springs, CO Aug. 30, 2013).
- 827. “Developments in Electronic Discovery: Proposed Rules, Preservation, and Technology-Assisted Review,” with Hon. David G. Campbell, Claire V. Eagan, and Hon. T. Lane Wilson, Tenth Circuit

Judicial Conference, Session 2 of 2 (Colorado Springs, CO Aug. 30, 2013).

- 828. “Search and Production Part I: A Technological Primer,” with Jason R. Baron, Conor R. Crowley, and Hon. David J. Waxse, Federal Judicial Center (“FJC”) eDiscovery Seminar for Federal Judges (Philadelphia, PA Sept. 10, 2013).
- 829. “Search and Production Part II: Challenges and Defenses,” with Jason R. Baron, Conor R. Crowley, and Hon. David J. Waxse, Federal Judicial Center (“FJC”) eDiscovery Seminar for Federal Judges (Philadelphia, PA Sept. 10, 2013).
- 830. “Local Initiatives and Proposed Amendments to the Federal Rules of Civil Procedure,” with Hon. Ronald J. Hedges and Kenneth J. Withers, Federal Judicial Center (“FJC”) eDiscovery Seminar for Federal Judges (Philadelphia, PA Sept. 11, 2013).
- 831. “Rule 502, Privilege, and Work Product,” with Dan Capra and Hon. David J. Waxse, Federal Judicial Center (“FJC”) eDiscovery Seminar for Federal Judges (Philadelphia, PA Sept. 11, 2013).
- 832. “Collection, Review, and Production: The Evolving Roles of People, Process, and Technology,” with R. Stanton Dodge, Sean R. Gallagher, Patrick L. Oot, and David Thomson, Institute for the Advancement of the American Legal System (“IAALS”) / The National Judicial College Second Annual Educational Summit for State Court Judges: Unlocking eDiscovery (Denver, CO Sept. 19, 2013).
- 833. “Crafting Model Orders, Guidelines, and Rules,” with Thomas Y. Allman, William P. Butterfield, William F. Dressel, Steven S. Gensler, Hon. Paul W. Grimm, Rebecca Love Kourlis, IAALS / J5dicial College Second Annual Educational Summit for State Court Judges: Unlocking eDiscovery (Denver, CO Sept. 20, 2013).
- 834. “Technology-Assisted Review, Predictive Coding, and New Search Technologies,” with Ashish S. Prasad and Brian Rocca, at Practicing Law Institute (“PLI”) Electronic Discovery Institute 2013: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 24, 2013).
- 835. “An Introduction to Technology-Assisted Review,” with John J. Rosenthal and Elizabeth Treubert Simon, Rossdale Continuing Legal Education (“CLE”) Webinar on E-Discovery, Litigation Holds, and Metadata 101 (Sept. 25, 2013).
- 836. “Predictive Coding Won’t Change My Practice and Other Fairy Tales,” with Craig Ball, Hon. Paul W. Grimm, and Dera J. Nevin (Sept. 30, 2013).
- 837. “Predictive Coding,” with David Kessler and Hon. Andrew J. Peck, at the E-Discovery Trial Advocacy Institute Presented by The Huron Legal Institute in Conjunction with Sandpiper Partners (New York, NY Oct. 1, 2013).
- 838. “Fundamentals of Electronic Discovery,” Guest Lecturer at Brian Donnelly’s, Conrad Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age (“LDA”) Clinic Course at Columbia Law School (New York, NY Oct. 3, 2013).
- 839. “Predicting Predictive Coding,” with Jason R. Baron and Ralph C. Losey, IT-Lex Innovate Conference (Winter Park, FL Oct. 18, 2013).

- 840. “Technology Law and Ethics in the Information Age,” with William Hamilton, Hon. Ronald J. Hedges, and Jason A. Pill, IT-Lex Innovate Conference (Winter Park, FL Oct. 18, 2013).
- 841. “Fundamentals of Electronic Discovery for New Associates,” Wachtell, Lipton, Rosen & Katz New Associate Orientation, with Luis A. McNish and Claudia T. Morgan (New York, NY Oct. 22, 2013).
- 842. “Defending eDiscovery Process: Burdens, Standards, and Best Practices,” with Scott Reents, Brendan Schulman, and Hon. Craig B. Shaffer, TSC WG1 Annual Meeting (Phoenix, AZ Nov. 7, 2013).
- 843. “Fundamentals of Technology-Assisted Review,” Video Guest Lecturer at Craig Ball’s eDiscovery Course at the University of Texas at Austin School of Law (Nov. 11, 2012).
- 844. “The Annual Judicial Roundtable,” with Hon. John M. Facciola, Hon. James C. Francis IV, Hon. Paul W. Grimm, Hon. Frank Maas, Hon. Andrew J. Peck, and David Waxse,” The Georgetown Advanced eDiscovery Institute (Ritz-Carlton, Tysons Corner VA Nov. 22, 2013).
- 845. “Fundamentals of Electronic Discovery,” with Justice Deborah Chimes, Lync Videoconference for The Justice Robert H. Jackson Center Inn of Court in Jamestown, NY (Nov. 25, 2013).
- 846. “Predictive Coding for eDiscovery,” Nineteenth Annual Advanced American Law Institute (“ALI”) Conference on Life Insurance and Financial Services Litigation, (Washington, DC Dec. 5, 2013).

2012 TALKS

- 847. “The New York Pilot for Complex Litigation and E-Discovery Order,” with Chris Dale, Karl A. Schieneman, and Ariana J. Tadler, ESIBytes Podcast (Jan. 9, 2011).
- 848. “A Primer on Technology-Assisted Review for Wachtell Lipton Paralegals,” with Luis A. McNish, Wachtell, Lipton, Rosen & Katz Training Seminar (New York, NY Jan. 11, 2012).
- 849. “2012 E-Discovery Case Law Forecast: Hindsight is 20/20,” with Dennis R. Kiker, Robert Rohlf, and Hon. David J. Waxse, Exterro Webinar (Jan. 12, 2012).
- 850. “Predictive Review: Combining the Human Element of Document Review with Machine Learning Technology,” with James Andrews, Hon. Andrew J. Peck, Jessica Ross, and Ian Wilson, Servient Luncheon Program at Le Cirque (New York, NY Jan. 24, 2012).
- 851. “Man v. Machine: The Promise and Challenge of Predictive Coding and Other Disruptive Technologies,” with Dean Gonsowski, Ralph C. Losey, and Hon. Andrew J. Peck, Symantec General Plenary Session at LegalTech New York 2012 (New York, NY Jan. 30, 2010).
- 852. “More Predictive Than Ever – Predictive Coding, Predictive Costs and Predictive Outcomes – New Techniques to Manage and Control Electronic Discovery,” with Daniel Garrie, Kathryn (“Kit”) Goetz, Joel M. Mitnick, and Warwick Sharp, Equivio Panel at LegalTech New York 2012 (New York, NY Jan. 30, 2010).
- 853. “Computer-Assisted Review: Streamlining Document Review in the Information Age,” with Laura Kibbe, Hon. Andrew J. Peck, David Shonka, Senior Master Steven Whitaker, Epiq Supersession at LegalTech New York (New York, NY Jan. 31, 2012).

- 854. “Technology-Assisted Review (“TAR”): When to Use It and How to Defend It,” with Ann Marie Gibbs, Ralph C. Losey, and Hon. Frank Maas, Daegis Panel at LegalTech New York (New York, NY Feb. 1, 2012).
- 855. “Judicial Panel Discussion: Evaluation, Assessment and Outcomes of Current Cases Involving eDiscovery,” with Hon. Robert Biddlecombe Collings, Hon. Frank Maas, and Hon. Craig B. Shaffer, at Q1 Production’s eDiscovery for Financial Services Conference (New York, NY Feb. 7, 2012).
- 856. “Using Advanced Search Technology in eDiscovery: Are We Ready for Watson?,” at Q1 Production’s eDiscovery for Financial Services Conference (New York, NY Feb. 7, 2012).
- 857. “Fundamentals of E-Discovery,” with Jeremy R. Feinberg, Guest Lecture at Brian Donnelly’s, Conrad Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Feb. 9, 2012).
- 858. “ESI in the Courts: What Happened in 2011 and Possible Changes in 2012 and Beyond,” with Hon. John M. Facciola, Hon. Ronald J. Hedges, and Jeane A. Thomas, American Law Institute American Bar Association (“ALI-ABA”) Quarterly Webinar (Feb. 16, 2012).
- 859. “What Is Electronic Discovery and Why Has It Become Such an Issue?,” Columbia Law School’s Society for Law, Science & Technology (“SLST”) (New York, NY Mar. 6, 2012).
- 860. “Technology-Assisted Review in eDiscovery: Watson Meets Daubert?,” WebEx Presentation at Tanina Rostain’s and Roger Skalback’s Georgetown University Law Center Technology, Innovation, and Law Practice Course (Mar. 14, 2012).
- 861. “Technology-Assisted Review in eDiscovery: Watson Meets Daubert?,” Continuing Legal Education (“CLE”) Program at Wachtell, Lipton, Rosen & Katz (New York, NY Mar. 15, 2012).
- 862. “The First Amendment Meets the Internet: Struggle Trying to Distinguish Wide-Open, Often Vitriolic, Commentary on the Internet,” with Mark A. Berman, Andre A. Brochetelli, Lisa Cohen, Danielle M. DeFilippis, Richard H. Dolan, Herbert Eisenberg, Eugene Kublanovsky, Jack P. Levin, Josh Lipsman, Hon. Karla Moskowitz, Edward O’toole, Adam Pulver, Shawn J. Rabin, and Blair Russell, at the New York Inn of Court (New York, NY Mar. 21, 2012).
- 863. “Inadvertent Production and Loss of Privilege and Work Product Protection: What is Federal Rule of Evidence 502 and What Does It Do?,” with Hon. Ronald J. Hedges, PLI Telephone Briefing on Technology, ESI, and You (Mar. 23, 2012).
- 864. “Electronically Stored Information in Matrimonial Cases,” with Hon. Henry Nowak, at the New York State Judicial Institute’s 2012 Matrimonial Seminar for New York State Matrimonial Court Judges and Court Attorneys (White Plains, NY Mar. 27, 2012).
- 865. “Ethics and E-Discovery Searches,” with Bennett B. Borden, Thomas B. Mason, and Ellen (“Elle”) Stefani Pyle, for the E-Discovery Committee of the Litigation Section of the Washington, DC Bar Association (Washington, DC Apr. 12, 2012).
- 866. “Ethics Game Show: E-Discovery Edition,” with Hon. Timothy S. Driscoll, Jeremy R. Feinberg, Hon. James C. Francis, IV, Artemis Lekakis, and Hon. Frank Maas (New York, NY Apr. 20, 2012).

- 867. “Defense of Process: Best Practices and Guidelines,” with Robert Arnold, Sherry Harris, Henry Kelston, and Hon. Craig B. Shaffer, at The Sedona Conference Working Group 1 Mid-Year Meeting (Denver, CO Apr. 26 & 27, 2012).
- 868. “Model Orders, Default Standards, and Pilot Projects, with Kevin F. Brady, Howard Feldman, Hon. Ronald J. Hedges, Hon. Elizabeth D. Laporte, Edward Reines, Jeffrey C. Sharer, and Ariana J. Tadler, at The Sedona Conference Working Group 1 Mid-Year Meeting (Denver, CO Apr. 27, 2012).
- 869. “An Overview of the E-Discovery Process for the Judges and Clerks of the New York State Commercial Division,” with Jeremy R. Feinberg, Lunch Presentation to the New York State Unified Court System Commercial Division Judges and Clerks (New York, NY Apr. 30, 2012).
- 870. “Using Technology Assisted Review to Slash E-Discovery Costs: Opportunities, Challenges, and Ethical Considerations,” with Gordon V. Cormack and Marc Wolinsky, at the 2012 Wachtell, Lipton, Rosen, and Katz Seminar – New York (New York, NY May 2, 2012).
- 871. “Technology-Assisted Review in eDiscovery: Watson Meets Daubert?, “Continuing Legal Education (“CLE”) Program at JPMorgan Chase (New York, NY May 3, 2012).
- 872. “Tools, Technology and Process: The Three Legged eDiscovery Stool,” with Jay Leib, Patrick R. McColloch, and Susan R. Sparrow, IE Discovery’s Annual Government Symposium (Washington, DC May 10, 2012).
- 873. “Legal Ethics in the Cloud,” with Jeremy R. Feinberg, at Practising Law Institute’s (“PLI’s”) Cloud Computing 2012: Cut Through the Fluff and Tackle the Critical Stuff (New York, NY May 11, 2012).
- 874. “Practice Support Tools and the Rise of the Machine,” with Marc Lauritsen, Kingsley Martin, and Derek Schueren at the Ark Group’s Forum on Business Intelligence and Analytics for Law Firms (New York, NY May 17, 2012).
- 875. “Defending the Use of Technology-Assisted Review in eDiscovery: ‘Watson Meets Daubert,’” with Jason R. Baron, Emily A. Cobb, Jerone J. English, and Raymond B. Kim, at the American Bar Association (“ABA”) Litigation Section 6th National Institute on E-Discovery (New York, NY May 18, 2012).
- 876. “Managing ESI in Discovery: Identification, Collection, Review, and Production of ESI in Civil Litigation,” with Hon. Ronald J. Hedges, Samantha J. Lofton, and Tania Mabrey, American Law Institute American Bar Association (“ALI-ABA”) Webinar (May 30, 2012).
- 877. “The Ethics of Advocacy in the E-Discovery Sphere: What Does Competence, Candor, Fairness Require in Practice?,” with Mark A. Berman, Julia Brickell, Hon. James C. Francis IV, and Hon. Andrew J. Peck, at E-Discovery: Best Practices & Ethical Implications, New York City Bar Center for CLE (New York, NY May 30, 2012).
- 878. “Avoiding Sanctions in the Expanding Digital Universe,” with Andrew S. Baron, Hon. James C. Francis IV, Hon. Andrew J. Peck, and Sandra Rampersaud, at E-Discovery: Best Practices & Ethical Implications, New York City Bar Center for CLE (New York, NY May 30, 2012).
- 879. “Form of Production and Federal Rule of Evidence 502,” Guest Lecturer at Hon. Ronald J. Hedges’ Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course

(Washington, DC June 3, 2012).

- 880. “The Evolving Law on Search Techniques and Protocols,” Distinguished Lecturer at Georgetown University Law Center's eDiscovery Training Academy (Washington DC, June 7, 2012).
- 881. “Technology-Assisted Review in eDiscovery: Watson Meets Daubert?,” Continuing Legal Education (“CLE”) Program at Genentech, Inc. (South San Francisco, CA June 11, 2012).
- 882. “Legal Ethics in the Cloud,” with Jeremy R. Feinberg, at Practising Law Institute’s (“PLI’s”) Cloud Computing 2012: Cut Through the Fluff and Tackle the Critical Stuff Program (San Francisco, CA June 11, 2012).
- 883. “Expert Roundtable,” with Ralph C. Losey, Matthew Nelson, Herbert L. Roitblat, Lisa Rosen, Jeffrey C. Sharer, and Tomas M. Thompson, at the Seventh Circuit Pilot Project Computer-Assisted Review Workshop: Mock Meet-and-Confer & Hearing and Roundtable Discussion with Industry Experts (Chicago, IL, June 14, 2012).
- 884. “Ethics and Risk Management for Privacy Professionals,” at Practising Law Institute’s (“PLI’s”) Thirteenth Annual Institute on Privacy and Security Law (New York, NY June 18, 2010).
- 885. “Electronically Stored Information in Matrimonial and Family Court Cases,” Master’s Class Sponsored by the New York City Family Court Judges Association (New York, NY June 19, 2012; Judge Ilana Gruebel; NYU Law School Vanderbilt Hall).
- 886. “Ethical Issues in E-Discovery and Cloud Computing,” Master’s Seminar on Ethics at the 2012 Annual Florida Bar Convention (Kissimmee, FL June 22, 2012).
- 887. “E-Discovery, Litigation Holds, and Metadata,” with Steven C. Bennett and James S. Zucker, Rossdale Continuing Legal Education (“CLE”) Webinar (June 27, 2012).
- 888. “Government Investigations and Demands for ESI – What’s a Corporation to Do?,” with Hon. Ronald J. Hedges and David C. Shonka, Practising Law Institute (“PLI”) Telephone Briefing on Technology, ESI, and You, (June 29, 2012).
- 889. “Demystifying Predictive Coding: Using Technology to Reduce Review Costs,” with Sean O’Grady and Carmen Oveissi Field, Deloitte Insights Video Podcast (New York, NY July 13, 2012).
- 890. “The Digital Frontier: Truth Versus Privacy,” at the 75th Annual Summer Conference of the National Council of Juvenile and Family Court Judges (New Orleans, LA July 16, 2012).
- 891. “Changing World of ESI & E-Discovery: Summer 2012 Update,” with Hon. Ronald J. Hedges, Hon. Elizabeth D. Laporte, and Jeane A. Thomas, American Law Institute Continuing Legal Education (“ALI CLE”) Quarterly Webinar (July 18, 2012).
- 892. “The Who, the What and the How of Technology Assisted Review,” with Jason Lichter, David S. Leone, and Brendan M. Schulman, The Cowen Group Leadership Breakfast (New York, NY July 19, 2012).
- 893. “Predictive Coding and Validation,” with Bennett B. Borden, Thomas C. Gricks III, David D. Lewis, Herbert Roitblat, and Karl Schieneman, at the Carmel Valley eDiscovery Retreat (Carmel, CA July 24, 2012).

- 894. “Current Issues in E-Discovery,” with Robert B. Fitzpatrick, Hon. Elizabeth D. Laporte, Hon. Matthew F. Kennelly, Hon. Rebecca R. Pallmeyer, and Hon. Craig B. Shaffer, at the 19th Annual American Law Institute Continuing Legal Education (“ALI CLE”) Current Developments in Employment Law (Santa Fe, NM July 26, 2012).
- 895. “Social Media Developments,” with Robert B. Fitzpatrick, Hon. Elizabeth D. Laporte, Hon. Matthew F. Kennelly, and Hon. Craig B. Shaffer, at the 19th Annual American Law Institute Continuing Legal Education (“ALI CLE”) Current Developments in Employment Law (Santa Fe, NM July 27, 2012).
- 896. “Can Computers Do It Better, Faster, and Cheaper—A Discussion of Predictive Coding,” with Hon. Andrew J. Peck, Jeffrey C. Sharer, Sonya Sigler, and Martin T. Tully, at the American Bar Association (“ABA”) Section of Science and Technology e-Discovery and Digital Evidence (“EDDE”) Committee Meeting (Chicago, IL Aug. 1, 2012).
- 897. “Attorney-Client Privilege Reviews and Inadvertent Disclosures: Conducting a Privilege Review and Leveraging FRE 502 and Clawback Agreements to Maintain Privileged Communication and Protect Work Product,” with Jennifer F. Bettrami and Sarah Gillett, Strafford Publications Webinar (Sept. 11, 2012).
- 898. “Defense of Process,” with Donald C. Ramsay, Michael E. Moskovitz, and Brendan M. Schulman, at The Sedona Conference Working Group on Electronic Document Retention and Production 2012 Annual Meeting (Atlanta, GA Sept. 13, 2012).
- 899. “Proposed Amendments to the Federal Rules,” with William P. Butterfield, Conor R. Crowley, Steven S. Gensler, and John J. Rosenthal, at The Sedona Conference Working Group on Electronic Document Retention and Production 2012 Annual Meeting (Atlanta, GA Sept. 13, 2012).
- 900. “E-Discovery Case Law Update II: The TAR Cases,” with Kenneth J. Withers, at The Sedona Conference Working Group on Electronic Document Retention and Production 2012 Annual Meeting (Atlanta, GA Sept. 13, 2012).
- 901. “Search,” with Amor A. Esteban and Hon. David J. Waxse, at the 2012 E-Discovery Seminar for Federal Judges (Baltimore, MD Sept. 19, 2012).
- 902. “Local Initiatives,” with Hon. Ronald J. Hedges and Kenneth J. Withers at the 2012 E-Discovery Seminar for Federal Judges (Baltimore, MD Sept. 20, 2012).
- 903. “Working Smarter, Working Faster, Working Cheaper: What Does Predictive Coding Really Mean For Your Business and How Can You Harness It?,” with Mark Kindy, Michael Klein, Patrick Oot, and Hon. Andrew J. Peck, at the Information Governance and eDiscovery Strategy Exchange (Washington, DC Sept. 21, 2012).
- 904. “The Role of Transparency and Cooperation in Technology-Assisted Review,” “Think Tank 3” at the Information Governance and eDiscovery Strategy Exchange (Washington, DC Sept. 21, 2012).
- 905. “Hot Topics in eDiscovery: Defensibility in eDiscovery,” with Thomas Y. Allman and Anne S. Jordan at PLI’s 2012 E-Discovery Conference (New York, NY Sept. 24, 2012).
- 906. “Okay, I’m Sold on Technology-Assisted Review – Now What?,” with Gordon V. Cormack and Conor R. Crowley, Bloomberg BNA Webinar (Sept. 25, 2012).

- 907. “Determining the Scope of Preservation,” with Michael Arkfeld, Denise Talbert, and Mark Tamburri, Legal Hold Pro 2012 Conference on Preservation Excellence (Portland, OR Sept. 27, 2012).
- 908. “The Changing Technology Landscape,” with Michael Arkfeld and Hon. Ronald J. Hedges, Legal Hold Pro 2012 Conference on Preservation Excellence (Portland, OR Sept. 28, 2012).
- 909. “Where Do We Go From Here?,” with Hon. Ronald J. Hedges, Jeane Thomas, and Paul Weiner, Legal Hold Pro 2012 Conference on Preservation Excellence (Portland, OR Sept. 28, 2012).
- 910. “Fundamentals of E-Discovery,” with Jeremy R. Feinberg, Guest Lecture at Brian Donnelly’s, Conrad Johnson’s, and Mary Marsh Zulack’s Lawyering in the Digital Age Clinic Course at Columbia Law School (New York, NY Oct. 1, 2012).
- 911. “Rule 502 Symposium,” Advisory Committee on Evidence Rules (Charleston, SC Oct. 5, 2012).
- 912. “The Evolving Practice and Case Law on Search: Technology-Assisted Review,” Presentation to the Committee on Professional Ethics of the Association of the Bar of the City of New York (Oct. 11, 2012).
- 913. “A Practitioner’s Guide to Statistical Sampling in eDiscovery,” with Gordon V. Cormack, Maureen O’Neill, and Jim Wagner, DiscoverReady Webinar (Oct. 16, 2012).
- 914. “Fundamentals of Electronic Discovery for New Associates,” with Luis A. McNish, Wachtell, Lipton, Rosen & Katz New Associate Training (New York, NY Oct. 16, 2012).
- 915. “‘Technology-Assisted Review’: What It is, How It Works, and Why You Should Care,” at Columbia Law School’s Society for Law, Science & Technology (“SLST”) (New York, NY Oct. 18, 2012).
- 916. “E-Discovery: Where Are We? What’s to Come?,” with Stephen Y. Chow, Hon. Robert B. Collings, Martha A. Mazzone, and Kenneth J. Withers, Bench and Bar Conference of the United States District Court for the District of Massachusetts: Changing Landscapes in Law, Legal Practice and Beyond (Newton, MA Oct. 19, 2012).
- 917. “Ethics and the Use of Technology: ‘Technology-Assisted Review’ as an Example of a New Technology,” Guest Lecturer at Jeremy R. Feinberg’s Professional Responsibility Course at Columbia Law School (New York, NY Oct. 22, 2012).
- 918. “Ethical Issues in E-Discovery, Social Media and the Cloud,” with Hon. Ronald J. Hedges, Rutgers Law and Technology Law Journal Symposium (Newark, NJ Oct. 23, 2012).
- 919. “Asking the Right Questions: The Challenge of Big Data,” with V. Mary Abraham, Chad C. Ergun, and Joshua Fireman, at Ark Group’s Eighth Annual Knowledge Management in the Legal Profession Conference (New York, NY Oct. 25, 2012).
- 920. “Ethical Issues in Litigation: Ethics and the Internet—Social Media and Cloud Computing,” with Hon. Charles E. Bullock, Michael L. Doane, and Douglas R. Nemea, at the American Intellectual Property Law Association (“AIPLA”) Annual Conference (Washington, DC Oct. 26, 2012).
- 921. “‘Technology-Assisted Review’: What It Is, How It Works, and Why You should Care,” Guest Lecturer at Craig Ball’s eDiscovery Course at the University of Texas at Austin School of Law (Austin, TX Oct. 29, 2012).

- 922. “‘Technology-Assisted Review’: Evolving Case Law and Practice,” American Bar Association (“ABA”) Section of Science and Technology e-Discovery and Digital Evidence (“EDDE”) eMeeting / WebEx (Nov. 1, 2012).
- 923. “Ethics and Professionalism: Social Media and Cloud Computing,” at the State Bar of Georgia (Atlanta, GA Nov. 2, 2012).
- 924. “Technology-Assisted Review: Evolving Case Law and Practice,” with Gordon V. Cormack, Practicing Law Institute (“PLI”) Telephone Briefing on Technology, ESI, and You (Nov. 12, 2012).
- 925. “Some Thoughts on Technology-Assisted Review,” Guest Lecturer at John M. Barkett’s E-Discovery Course at the University of Miami Law School (Miami, FL Nov. 13, 2012).
- 926. “‘Predictive Coding’: What Is It, How Does It Work, and Why Should You Use It?,” at the 11th Annual Energy Litigation Conference, Institute for Energy Law of The Center for American and International Law, American Bar Association (“ABA”) Section of Environment, Energy and Resources, and ABA Energy Litigation Committee of the Section of Litigation (Houston, TX Nov. 15, 2012).
- 927. “The Ethics of Technology-Assisted Review,” with John M. Barkett and Kenneth J. Withers, ABA Webinar (Nov. 20, 2012).
- 928. “Plain Talk on Technology-Assisted Review,” with Craig Ball, American Law Institute (“ALI”) Continuing Legal Education (“CLE”) Program (Dec. 5, 2012).
- 929. “Measuring, Validating, and Defending Your Technology-Assisted Review: What Metrics and Measurements are Necessary or Appropriate?,” with Herbert L. Roitblat, David D. Lewis, Ian Soboroff, and Ian Wilson, Georgetown Advanced E-Discovery Institute (Ritz-Carlton, Tyson’s Corner, VA Dec. 6, 2012).
- 930. “Technology-Assisted Review: Evolving Case Law and Practice,” at the New Jersey Chapter of Women in eDiscovery (Parsippany, NJ Dec. 11, 2012).
- 931. “2012 eDiscovery Case Law Review: The 3 Ps for 2013,” with Scott Giordano, Hon. Ronald J. Hedges, and Jeane A. Thomas, Exterro Webinar (Dec. 12, 2012).
- 932. “Technology-Assisted Review: Evolving Case Law and Practice,” with Gordon V. Cormack, Videotaping at the New York State Judicial Institute (White Plains, NY Dec. 13, 2012).
- 933. “Technology-Assisted Review: Evolving Case Law and Practice,” with Michael Dalewitz, at the New York Metropolitan Area Chapter of the Association of Litigation Support Professional (“ALSP”) (New York, NY Dec. 20, 2012).

2011 TALKS

- 934. “Fundamentals of E-Discovery,” for the Federal Practice Committee of the United States District Court for the District of Nebraska (Lincoln and Omaha, NE Jan. 7, 2010).
- 935. “Electronic Data in Litigation: Trends and Developments (ESI Quarterly Winter 2011),” with Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association (ALI-ABA) Audio Webcast Program (Jan. 12, 2010).

- 936. “Ethics in the Electronic Age: Be Careful When Using That Cell Phone, Blackberry, Blog, Social Network,” with Jeremy R. Feinberg, David A. Lewis, and Alan Winchester, at the Association of the Bar of the City of New York (New York, NY Jan. 20, 2011).
- 937. “Potential Minefields and Dispute Resolution Strategies for E-Discovery in Arbitration,” Webcast for West Professional Development, a Thompson Reuters Business (Jan. 25, 2011).
- 938. “Statistical Sampling for Dummies: Applying Measurement Techniques in eDiscovery,” LDM Global Webinar with Gordon V. Cormack and Scott W. Merrick (Jan. 27, 2011).
- 939. “Next Decade of Document Review: Cheaper, Better, Smarter,” with Beth A. Koehler, Hon. Andrew J. Peck, Christopher D. Wall, and John M. Wilan, Kroll Ontrack Litigation Technologies Workshop at LegalTech New York (New York, NY Feb. 1, 2011).
- 940. “Introduction to ESI Search,” with Gene Eames, Sam McCollum, and Rudy Rouhana, Daegis Panel at LegalTech New York (New York, NY Feb. 2, 2011).
- 941. “Topics in Data Analytics and Legal Search,” with Gene Eames, Anne Marie Gibbs, and Doug Stewart, Daegis Panel at LegalTech New York (New York, NY Feb. 2, 2011).
- 942. “Form of Production, Privilege, Federal Rule of Evidence 502, and Ethics” Guest Lecturer with Hon. John M. Facciola, at Hon. Ronald J. Hedges’ Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course (Washington, DC Feb. 5, 2011).
- 943. “Some Things You Should Know About E-Discovery,” Wachtell, Lipton, Rosen & Katz Continuing Legal Education (“CLE”) Program (New York, NY Feb. 9, 2011).
- 944. “Some Things You Should Know About E-Discovery,” Guest Lecturer with Jeremy R. Feinberg, at Brian Donnelly’s, Conrad Johnson’s and Mary Zulack’s Columbia Law School Digital Law Clinic Course (New York, NY Feb. 10, 2011).
- 945. “Sampling for eDiscovery Made Easy,” with Prof. Gordon V. Cormack, Bureau of National Affairs (“BNA”) Webinar (Feb. 15, 2011).
- 946. “Using the Cloud to Deliver Legal Process Outsourcing: Risks and Ethical Considerations,” with Paul J.R. Roy, at the International Quality and Productivity Center (“IQPC”) Legal Process Outsourcing Summit (Feb. 16, 2011 New York, NY).
- 947. “Practitioners’ Update,” with Joseph M. Burton, Prof. Richard L. Marcus, Michael J. McGuire, Steven Teppler, and Lucy Thompson, at the Second Annual Electronic Discovery and Digital Evidence Practitioners’ Workshop, sponsored by the American Bar Association’s (“ABA’s”) Section of Science & Technology Law e-Discovery and Digital Evidence (“EDDE”) Committee (San Francisco, CA Feb 18, 2011).
- 948. “Search: Trends, Myths, and Reality,” with Prof. Gordon V. Cormack and Bruce Hedin, at the Second Annual Electronic Discovery and Digital Evidence Practitioners’ Workshop, sponsored by the American Bar Association’s (“ABA’s”) Section of Science & Technology Law e-Discovery and Digital Evidence (“EDDE”) Committee (San Francisco, CA Feb. 18, 2011).

- 949. “Ethics Panel,” with Hon. Gail A. Andler, Hon. John M. Facciola, Prof. Geoffrey C. Hazard, Hon. Frank Maas, and Hon. Andrew J. Peck, at the Second Annual Electronic Discovery and Digital Evidence Practitioners’ Workshop, sponsored by the American Bar Association’s (“ABA’s”) Section of Science & Technology Law e-Discovery and Digital Evidence (“EDDE”) Committee (San Francisco, CA Feb. 19, 2011).
- 950. “Advanced Search Techniques in E-Discovery,” Training Program for Wachtell, Lipton, Rosen & Katz’s Automated Legal Support Department Managers (New York, NY Feb. 22, 2011).
- 951. “Taming the ESI Beast: Judicial Management and Other Strategies to Lower Costs and Expedite Cases,” with Kenneth J. Withers, at the Annual Judges’ Retreat of the U.S. District Court for the Western District of Missouri (Kansas City, MO Feb. 25, 2011).
- 952. “Test Your Ethics 2011: A Discussion of Real World Ethical Issues,” with Jeremy R. Feinberg, Thaddeus Hackworth, John Vagelatos, and Sara Walshe, for New York Corporation Counsel (Brooklyn, NY Feb. 28, 2011).
- 953. “Technology-Assisted Review Can be More Effective and More Efficient Than Exhaustive Manual Review,” Richmond Journal of Law and Technology Symposium on “Shooting Fish in a Bottomless Barrel: Electronic Discovery in a World of Cloud Computing, Data Hoarding and Social Networking” (Richmond, VA Mar. 3, 2011).
- 954. “Pension Committee Revisited,” with Chris Bright, Brad Harris, and Ronald J. Hedges, Legal Hold Pro Webinar (Mar. 4, 2011).
- 955. “Caselaw and Rules Update,” with Kathryn Burkett Dickson, Hon. Luisa S. Porter, Hon. Carl J. West, and Kenneth J. Withers The 5th Annual Sedona Conference Institute Program on Staying Ahead of the eDiscovery Curve: Strategies to Reduce Costs and Meet Judicial Expectations (San Diego, CA Mar. 17, 2011).
- 956. “Proportionality in Preservation & Discovery,” with Hon. Gail A. Andler, Paul E. Burns, Jerone J. English, Hon. Elizabeth D. Laporte, Jonathan M. Redgrave, and Joseph R. Saveri, at The 5th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Strategies to Reduce Costs and Meet Judicial Expectations (San Diego, CA Mar. 17, 2011).
- 957. “Cooperation Guidance for In-House Counsel & Litigators,” with Jerone J. English, Cecil A. Lynn, Hon. Louisa S. Porter, Joseph R. Saveri, Hon Carl J. West, and Kenneth J. Withers, at The 5th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Strategies to Reduce Costs and Meet Judicial Expectations (San Diego, CA Mar. 17, 2011).
- 958. “Ethical Obligations & Issues in eDiscovery,” with Jason R. Baron, Laura Buckland, Hon. Elizabeth D. Laporte, and Patrick L. Oot, at The 5th Annual Sedona Conference Institute (“TSCI”) Program on Staying Ahead of the eDiscovery Curve: Strategies to Reduce Costs and Meet Judicial Expectations (San Diego, CA Mar. 17, 2011).
- 959. “Electronic Discovery,” with Yalkin Demirkaya, Hon. James P. Flanagan, Sal Llannera, and Hon. Emily Pines, at the Suffolk County Bar Association / Suffolk Academy of Law (Hauppauge, NY Mar. 23, 2011).

- 960. “Fundamentals of E-Discovery and Social Media,” CLE Program for the Law Clerks and Court Attorneys of the New York State Court of Claims (Saratoga Springs, NY Mar. 30, 2011).
- 961. “The Top Ten (or So) E-Discovery Predictions for 2011,” with Ronald J. Hedges, The Association of Litigation Support Professionals (ALSP) Webinar (Mar. 31, 2011).
- 962. “The Ethics Game Show: E-Discovery Edition 2011,” with Jeremy R. Feinberg, Hon. James C. Francis IV, Hon. Frank Maas, and Allison J. Schoenthal, at Practising Law Institute (“PLI”) (New York, NY Apr. 1, 2011).
- 963. Presentation on Search & TREC, with Jason R. Baron, at the Richard K. Herrmann Technology Inn of Court (Wilmington, DE Apr. 11, 2011).
- 964. “The Electronic Age: How Courts are Dealing with Major Issues,” (ESI Quarterly Spring 2011),” with Hon. Paul W. Grimm, Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association (“ALI-ABA”) Audio Webcast Program (Apr. 13, 2011).
- 965. “Technology-Assisted Review Can be More Effective and More Efficient Than Exhaustive Manual Review,” at the Educating the Digital Lawyer Workshop at Columbia Law School (New York, NY Apr. 14, 2011).
- 966. “Rule 45 Subpoenas and Non-Party Production Issues in Electronic Discovery: Assessing the Burdens and Costs and Avoiding the Pitfalls,” with Anne Marie Gibbs and Babette V.E. Orenstein, Lorman Education Services Teleconference (Apr. 15, 2011).
- 967. “Ethics in the Electronic Age: How to Avoid Pitfalls When Using Your Gadgets,” Continuing Legal Education (“CLE”) Program for the New York Appellate Division Second Department, with Jeremy R. Feinberg, David A. Lewis, and Alan Winchester (Brooklyn, NY Weds. Apr. 20, 2011).
- 968. “Statistical Sampling for Dummies: Applying Measurement Techniques in eDiscovery,” with Gordon V. Cormack, The Association of Litigation Support Professionals (“ALSP”) Webinar (Apr. 21, 2011).
- 969. “The Sedona Principles, 3rd Edition, Principle 14: Sanctions & Preservation,” with Kevin F. Brady, William P. Butterfield, Conor R. Crowley, and John Luken, at The Sedona Conference Working Group on Electronic Document Retention & Production 2011 Mid-Year Meeting (Ft. Lauderdale, FL Apr. 28, 2011).
- 970. “Electronic Discovery Presentation for the Appellate Division First Department’s Law Clerks, Court Attorneys, and Staff,” with Mark Berman and James G. Ryan (New York, NY May 2, 2011).
- 971. “E-Discovery in the State Courts: Case Law and Rules Developments,” with Thomas Y. Allman, Hon. Ralph Artigliere, and Hon. Donald F. Parsons, Jr., and Kenneth J. Withers, Sedona Conference Webinar (May 3, 2011).
- 972. “Practical Considerations In Approaching Electronic Discovery,” with Sean Broderick, Andrew D. Goldsmith, and Hon. Peggy A. Leen, at the Annual District Court Training for the District of Nevada (Las Vegas, NV May 5, 2011).
- 973. “Balancing Privacy and Public Interest in the ‘Electronic Age’: Is There a Balance? Are There Irreconcilable Differences?,” with Karen Eltis, Natalie Gomez-Velez, and Stephen Schultze, at the

Princeton University Center for Information Technology Policy's Conference on "Privacy, Access and Technology and the Future of Litigation in the United States" (Princeton, NJ May 13, 2011).

- 974. "Cutting-Edge Search & Document Review: A Brave New World of Automation?," with Jason R. Baron, Monica McCarroll, and Howard J.C. Nicols, at the American Bar Association Section on Litigation's Fifth Annual National Institute on E-Discovery: Practical Solutions for Dealing with Electronically Stored Information (ESI)" (Washington, DC May 19, 2011).
- 975. "New Frontiers in E-Discovery and the Government Lawyer," with Chris May, David Shonka, and Terry Sweeney, at IE Discovery's Fourth Annual Electronic Discovery Symposium for Governmental Agencies (Washington, DC May 19, 2011).
- 976. "Can Technology Beat Humans at Document Review?," with Gordon V. Cormack, Bureau of National Affairs ("BNA") Webinar (May 26, 2011).
- 977. "Inconsistent Assessment of Responsiveness in E-Discovery: Difference of Opinion or Human Error?," with Gordon V. Cormack, Workshop on Setting Standards for Searching Electronically Stored Information in Discovery Proceedings ("DESI-IV"), at the 13th International Conference on Artificial Intelligence and the Law ("ICAIL 2011") (Pittsburgh, PA June 6, 2011).
- 978. "How to Conduct a Better Search . . . The Specifics," with Jason R. Baron and Jennifer Kneadle Mason, at The Western Pennsylvania Chapter of the Federal Bar Association's ("FBA's") "School's NOT Out for the Summer: The 2011 FBA E-Discovery Summer Series" (Pittsburgh, PA June 7, 2011).
- 979. "The Evolving Law on Search Techniques & Protocols," with Jason R. Baron, at the Georgetown Law Center's eDiscovery Training Academy (Washington, DC June 9, 2011).
- 980. "Form of Production, Accessible / Not Reasonably Accessible ESI, Cost Sharing / Shifting, Privilege and Federal Rule of Evidence 502, and Ethics." Guest Lecturer at Hon. Ronald J. Hedges' Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course (Washington, DC June 12, 2011).
- 981. "Overview of Electronic Discovery: An Update on New York State Case Law and Developments," with Mark A. Berman, James G. Ryan, and Alan M. Winchester, American Law Institute / American Bar Association ("ALI-ABA") Audio Webcast Program (June. 14, 2011).
- 982. "Government Investigations: E-Discovery Nuts, Bolts, and Defensible Search Strategies—New Developments and Critical Considerations," with Lisa Habbeshaw and Hon. Ronald J. Hedges, District of Columbia Federal Bar Association Webinar (June 15, 2011).
- 983. "The Latest in Search Trends for Litigators & In-House Counsel," with Jason R. Baron, Gordon V. Cormack, and Hon. Frank Maas, American Law Institute / American Bar Association ("ALI-ABA") Audio Webcast Program (June 16, 2011).
- 984. "Should I Friend the Judge and Other Current Ethical Challenges for Lawyers," at Practicing Law Institute's ("PLI's") Twelfth Annual Institute on Privacy and Security Law (New York, NY, June 21, 2011).

- 985. “Form of Production,” with Conor R. Crowley and Hon. James C. Francis IV, at the Federal Judicial Center’s E-Discovery Seminar for Federal Judges (Charleston, SC June 29, 2011).
- 986. “Search Techniques,” with Kenneth J. Withers, at the Federal Judicial Center’s E-Discovery Seminar for Federal Judges (Charleston, SC June 30, 2011).
- 987. “Rule 502, Privilege & Work Product,” with Hon. John M. Facciola and Kenneth J. Withers, at the Federal Judicial Center’s E-Discovery Seminar for Federal Judges (Charleston, SC June 30, 2011).
- 988. “Studies on Human Versus Technology-Assisted Review in E-Discovery,” with Gordon V. Cormack and Karl Schieneman, ESIBytes Podcast (July 7, 2011).
- 989. “Fundamentals of E-Discovery for New York State Unified Court System,” with Jeremy R. Feinberg, Videocast Program for the New York State Unified Court System (New York, NY July 26, 2011).
- 990. “This Really Happened: A Review of Real World Ethical Issues 2011,” with Hon. Sheila Abdus-Salaam, Jeremy R. Feinberg, Artemis Letakis, and Elizabeth Rotenberg-Schwartz, at Practising Law Institute (“PLI”) (New York, NY July 27, 2011).
- 991. “Back to Basics: A Technical Primer on E-Discovery,” with Jake Frazier, Hon. Andrew J. Peck, and Annette (“Toni”) Tomarazzo, Federal Bar Council (New York, NY Aug. 3, 2011)
- 992. “eDiscovery Outlook: Is Technology-Assisted Review Supporting Attorneys or Replacing Them?,” with Gordon V. Cormack, Mary Mack, and Johannes C. Scholtes, Zylab Webinar (Aug. 4, 2011).
- 993. “Emerging Trends in Search & Document Review: Are We Ready for Watson?,” with Bennett B. Borden and Gordon V. Cormack, and Hon. Frank Maas, at the Third Electronic Discovery and Digital Evidence Practitioners’ Workshop, sponsored by the American Law Institute / American Bar Association Section of Science & Technology Law (“ALI-ABA”) (New York, NY Aug. 15, 2011).
- 994. “Early Case Assessment: How to Get the Information You Need and What To Do With it When You Get It,” with Deborah Baron, Deborah R. Bernard, Heather Hughes, Emily Stapf, and Steven Teppler, at the Third Electronic Discovery and Digital Evidence Practitioner’ Workshop, sponsored by the American Law Institute / American Bar Association Section of Science & Technology Law (“ALI-ABA”) (New York, NY Aug. 15, 2011).
- 995. “E-Discovery and Ethics,” with Jeremy R. Feinberg, Hon. Frank Maas, and Hon. Karla Spaulding, at the Third Electronic Discovery and Digital Evidence Practitioners’ Workshop, sponsored by the American Law Institute / American Bar Association Section of Science & Technology Law (“ALI-ABA”) (New York, NY Aug. 16, 2011).
- 996. Federal Civil Rules Committee Mini-Conference (Dallas/Fort Worth, TX Sept. 9, 2011).
- 997. “Fundamentals of Electronic Discovery for New Associates,” with Luis A. McNish, Wachtell, Lipton, Rosen & Katz CLE Program (New York, NY Sept. 14, 2011).
- 998. “Predictive Coding—Overcoming Barriers to Entry,” with Keith Bernstein, Anne Kershaw, Aaron Laliberte, and Dawn Johnson, The Association of Litigation Support Professionals (“ALSP”) (Boston, MA Sept. 15, 2011).

- 999. “The Challenges of New Media: Facebook, Twitter, the Cloud, and Beyond....,” with Thomas Y. Allman and Hon. Ronald J. Hedges, Practicing law Institute’s (“PLI’s”) Electronic Discovery Guidance 2011: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 19, 2011).
- 1000. “Understanding and Managing Risks in Cross-Border eDiscovery,” at the September Meeting of the New Jersey Chapter of Women in E-Discovery (Parsippany, NJ Sept. 20, 2011).
- 1001. “Cross-Border E-Discovery: Meeting the Challenges and Mitigating the Risks,” with Richard Kershaw, Catalyst Webinar (Sept. 21, 2011).
- 1002. “Session 3: Dealing with the Challenges of Legal Holds: Pension Committee, Rimkus & Progeny,” with James Daley, Michael Moore, and Tom O’Connor, at Executive Counsel Institute’s E-Discovery for the Corporate Market Conference: “The Exchange” (Houston, TX Sept 22, 2011).
- 1003. “Session 6: Effective Cost and Risk Containment Steps to Achieve Proportionality,” with James Daley, John Schwab, and Paul Weiner, at Executive Counsel Institutes’ E-Discovery for the Corporate market Conference: “The Exchange” (Houston, TX Sept 22, 2011).
- 1004. “The Future of E-Discovery: Top Ten Trends and Predictions,” with Hon. Ronald J. Hedges and Chuck Pindell, Legal Service Providers Association (“LSPA”) Webinar sponsored by iCONNECT Development, LLC (Sept. 28, 2011).
- 1005. “Some Things You Should Know About E-Discovery,” Guest Lecturer with Jeremy R. Feinberg, at Brian Donnelly’s, Conrad Johnson’s and Mary Zulack’s Columbia Law School Digital Law Clinic Course (New York, NY Oct. 3, 2011).
- 1006. “Fundamentals of Electronic Discovery for New Associates,” with Luis A. McNish, Wachtell, Lipton, Rosen & Katz CLE Program (New York, NY Oct. 4, 2011).
- 1007. “Women Thought Leader Panel: E-Discovery Today, Tomorrow and in the Far Away Future,” with Michelle Briggs-Treadwell, Alitia Faccione, Caitlin Murphy, Allison Stanton, and Susan V. Watson, at the Masters Conference (Washington, DC Oct. 4, 2011).
- 1008. “Search and Retrieval: 2011 Update,” with Jason R. Baron and Ashish S. Prasad, at The Sedona Conference Annual Meeting (Austin, TX Oct. 7, 2011).
- 1009. “Sampling: An eDiscovery Primer,” with Chris May, IE Discovery Seminar for Government Attorneys (Chevy Chase, MD Oct. 12, 2011).
- 1010. “E-Discovery Search Tools and Techniques for RIM Professionals,” with Chris May, at the 2011 ARMA International Conference & Expo (Washington, DC Oct, 19, 2011).
- 1011. “International Considerations for E-Discovery,” with Hampton Coley and Theresa L. Widmann, at the October Meeting of the New York City Chapter of Women in E-Discovery (New York, NY Oct. 20, 2011).
- 1012. “eDiscovery in Transition: New Trends and FRCP Amendments on the Horizon,” with Hon. John M. Facciola, Hon. Ronald J. Hedges, and Jeane A. Thomas, ESI Quarterly Fall 2011, American Law Institute / American Bar Association (“ALI-ABA”) Audio Webcast Program (Oct. 25, 2011).

- 1013. "E-Discovery, Litigation Holds & Metadata Best Practices," with Steven C. Bennett and Michael E. Lackey, Rossdale Continuing Legal Education ("CLE") Webinar (Oct. 26, 2011).
- 1014. "Disruptive Technologies / Innovative Thinking," with Richard S. Granat, Marc Lauritsen, and Kingsley Martin, at the 2011 Futures Conference & Annual Meeting of the College of Law Practice Management (Chicago, IL Oct. 28, 2011).
- 1015. "Ethics and the Use of Technology," Guest Lecturer at Jeremy R. Feinberg's Professional Responsibility Course at Columbia Law School (New York, NY Oct. 31, 2011).
- 1016. "Sampling: An eDiscovery Primer," with Chris May, IE Discovery Seminar Webinar (Nov. 2, 2011).
- 1017. "European Cross-Border Data Protection," Luncheon Sponsored by H7b1, LexisNexis, IPRO TECH, and Equivio (New York, NY Nov. 9, 2011).
- 1018. "Defensible Document Review Using Advanced Technology," with Daniel K. Gelb, Thomas Shields, Thomas Svoboda, and Kenneth J. Withers, The Sedona Conference "Voices From the Desert" Webinar (Nov. 10, 2011).
- 1019. "The Lawyer's Perspective," at the NSF IIS Program E-Discovery Grant Advisory Board Meeting at the University of Maryland (College Park, MD Nov. 14, 2011).
- 1020. "TREC 2011 Legal Track Overview," with Gordon V. Cormack, at the TREC 2011 Legal Track Workshop (Gaithersburg, MD Nov. 15, 2011).
- 1021. "Defending the Use of Analytical Software in Civil Discovery," with Conor R. Crowley, Laura Kibbe, Hon. Elizabeth D. Laporte, and Howard J.C. Nicols, at the Georgetown University Law Center 2011 Advanced E-Discovery Institute (Crystal City, VA Nov. 18, 2011).
- 1022. "The Challenges of New Media: Facebook, Twitter, the Cloud, and Beyond....," with David E. Garrett and Hon. Ronald J. Hedges, Practicing law Institute's ("PLI's") Electronic Discovery Guidance 2011: What Corporate and Outside Counsel Need to Know (San Francisco, CA Dec. 2, 2011).
- 1023. "E-Discovery in Matrimonial Cases," With Hon. John M. Curran and Hon. Henry J. Nowak, at the Bar Association of Erie County (Buffalo, NY Dec. 12, 2011).

2010 TALKS

- 1024. "Ethics in the Electronic Age for New York State Court Attorneys," with Jeremy R. Feinberg, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (White Plains, NY Jan. 11, 2010).
- 1025. "Ethics in the Electronic Age for New York State Court Attorneys," with Jeremy R. Feinberg, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (White Plains, NY Jan. 14, 2010).
- 1026. "E-Discovery Lunch and Learn I," for the Automated Legal Support (ALS) Department at Wachtell, Lipton, Rosen & Katz (New York, NY Jan. 15, 2010).

1027. "Searching for ESI in All the Wrong Places: What Every Lawyer Needs to Know About Using Search Tools in E-Discovery," with Terry Sweeney, IE Discovery Webcast (Jan. 20, 2010).
1028. "E-Discovery Ethics," with Hon. John L. Carroll, William ("Bill") F. Hamilton, and Kenneth J. Withers, The Sedona Conference Voices From the Desert Webinar Series (Jan. 20, 2010).
1029. "Ethics in the Electronic Age: Be Careful When Using That Cell Phone, Blackberry, Blog, Social Network...", with Melissa A. Crane, Jeremy R. Feinberg, David A. Lewis, and Hon. Jacqueline W. Silbermann, at the Association of the Bar of the City of New York (New York, NY Jan 21, 2010).
1030. "Issue Area 1: Preservation," with Matthew Cohen, M. James Daley, and Jonathan M. Redgrave, at The Sedona Conference Training Program on eDiscovery Dispute Resolution for Special Masters and Mediators, presented in association with the Academy of Court-Appointed Masters (ACAM) (Phoenix, AZ Jan. 28, 2010).
1031. "Issue Area 4: Search Terms & Methodology," with Matthew Cohen, M. James Daley, John H. Jessen, and Timothy L. Moorehead, at The Sedona Conference Training Program on eDiscovery Dispute Resolution for Special Masters and Mediators, presented in association with the Academy of Court-Appointed Masters ("ACAM"), (Phoenix, AZ Jan. 28, 2010).
1032. "Issue Area 6: Privilege," with Hon. John M. Facciola, Jonathan M. Redgrave, and Hon. Shira A. Scheindlin, at The Sedona Conference Training Program on eDiscovery Dispute Resolution for Special Masters and Mediators, presented in association with the Academy of Court-Appointed Masters ("ACAM") (Phoenix, AZ Jan. 29, 2010).
1033. "EU Data Protection Rules and Their Practical Implementation: How do Corporations Respond to US Litigation and Regulatory Matters Involving Data Held in the EU Without Running Afoul of the Rules? - Part I," with Chris Dale, Browning E. Marean III, Nigel Murray, Vince Neicho, Hon. Andrew J. Peck, George I. Rudoy, and Senior Master Steven Whitaker, panel sponsored by Trilantic at LegalTech New York 2010 (New York, NY Feb. 1, 2010).
1034. "EU Data Protection Rules and Their Practical Implementation: How do Corporations Respond to US Litigation and Regulatory Matters Involving Data Held in the EU Without Running Afoul of the Rules? - Part II," with Chris Dale, Browning E. Marean III, Nigel Murray, Vince Neicho, Hon. Andrew J. Peck, George I. Rudoy, and Senior Master Steven Whitaker, panel sponsored by Trilantic at LegalTech New York 2010 (New York, NY Feb. 1, 2010).
1035. "Shifts in Legal Paradigms: Towards Defensible Search and Review," with Claudia M. Cohen, Jennifer R. Martin, and Hon. Andrew J. Peck, panel sponsored by Stroz Friedberg at LegalTech New York 2010 (New York NY Feb. 2, 2010).
1036. "What Keeps Me Up at Night and What Drives Me Crazy About E-Discovery," with Shawnna Childress, Hon. Katharine Sweeney Hayden, Carmen Oveissi Field, and Babette V.E. Orenstein, panel sponsored by Women in eDiscovery at LegalTech New York 2010 (New York NY Feb 2, 2010).
1037. "Thoughts on Pension Committee of the University of Montreal Pension Plan v. Banc of America Securities, LLC, Working with Clients on Implementing Legal Holds, and Other Topics," with Browning E. Marean III and Tom O'Connor, e-Discovery Zone Video sponsored by TechLaw Solutions in Connection with LegalTech New York 2010 (New York, NY Feb. 3, 2010).

- 1038. "Cloud Computing & Web 2.0: Discovery Challenges for Lawyers," with Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association ("ALI-ABA") Audio Webcast Program (Feb. 12, 2010).
- 1039. "'Triggers,' Preservation, and Search; Form of Production; Accessible / Not Reasonably Accessible Information; Privilege and Federal Rule of Evidence 502," Guest Lecturer at Hon. Ronald J. Hedges' Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course (Washington, DC Feb. 13, 2010).
- 1040. "Current Trends in Search & Retrieval and Best Practices in Project Management," Presentation at AlphaLit Corporate Headquarters (Huntington Valley, PA Feb. 19, 2010).
- 1041. "Ethics in the Electronic Age for New York State Court Attorneys," at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (Uniondale, NY Feb. 23, 2010).
- 1042. "Roundtable on Ethics and Electronic Evidence," Guest Lecturer with William P. Butterfield, Patrick L. Oot, and Jeane A. Thomas, at Hon. Ronald J. Hedges' Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course (Washington, DC Feb. 27, 2010).
- 1043. "Judge Scheindlin revisits Zubulake: Assessing the Impact of Pension Committee v. Banc of America Securities LLC, with Kevin F. Brady, Hon. Paul W. Grimm, and Hon. Ronald J. Hedges, Bureau of National Affairs ("BNA") Audioconference (Mar. 2, 2010).
- 1044. "Ethics in the Electronic Age for New York State Court Attorneys," with Jeremy R. Feinberg, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (Uniondale, NY Mar. 3, 2010).
- 1045. "Mapping Out the Steps to the E-Discovery Process," with Kevin F. Brady, at the Georgetown University Law Center E-Discovery Training Academy (Washington, DC Mar. 8, 2010).
- 1046. "The Keys to eDiscovery Project Management," with Scott W. Merrick, LDM Global Webinar (Mar. 11, 2010).
- 1047. "It's 2010, Do You Know Where Your Records Are: The Status of Search & Retrieval and the Role of Records & Information Management in eDiscovery," at the American Records Management Association (ARMA) 2010 MetroNYC Educational Workshop (New York, NY Mar. 18, 2010).
- 1048. "E-Discovery in 2010," Guest Lecturer with Hon. Ronald J. Hedges, at Adam I. Cohen's and Steven C. Bennett's Fordham University School of Law Electronic Discovery Course (New York, NY Mar. 22, 2010).
- 1049. "Real World Ethical Issues," with Jeremy R. Feinberg, Hon. James C. Francis IV, Pery D. Krinsky, and Laura Smith, at the Association of the Bar of the City of New York (New York, NY Mar. 25, 2010).
- 1050. "Special Masters for E-Discovery Management and Dispute Resolution," with Hon. Richard A. Levie, Hon. Shira A. Scheindlin, and Kenneth J. Withers, The Sedona Conference Voices From the Desert Webinar Series (Apr. 14, 2010).
- 1051. "Rule 45 Subpoenas and Non-Party Production Issues in Electronic Discovery: Assessing the Burdens and Costs and Avoiding the Pitfalls," with Anne Marie Gibbs and Babette V.E. Orenstein, Lorman

Education Services Teleconference (Apr. 20, 2010).

- 1052. “Discovery 2.0,” with Richard G. Braman and John H. Jessen, at the Mid-Year Meeting of The Sedona Working Group on Electronic Document Retention & Production (WG1) (Denver, CO Apr. 21, 2010).
- 1053. “Ethics Surrounding the Use of E-mail, Cell Phones and Other Electronics,” Continuing Legal Education (“CLE”) Program for Mental Hygiene Legal Services, Second Judicial Department, Appellate Division, State of New York (White Plains, NY Apr. 27, 2010).
- 1054. “2010: An E-Discovery Odyssey,” with David R. Buchanan, William P. Butterfield, Adam I. Cohen, Hon. Shira A. Scheindlin, and Emily Gold Waldman, co-sponsored by the Westchester Committee of the Federal Bar Council and PACE Law School (White Plains, NY Apr. 27, 2010).
- 1055. “Searching for ESI in All the Wrong Places: What Every Lawyer Needs to Know About Using Search Tools in E-Discovery,” with Terry Sweeney, IE Discovery, Inc. Program for Government Attorneys (Washington, DC Apr. 28, 2010).
- 1056. “Ethics Surrounding the Use of E-mail, Cell Phones and Other Electronics,” Continuing Legal Education (“CLE”) Program for Mental Hygiene Legal Services, Second Judicial Department, Appellate Division, State of New York (Central Islip, NY May 4, 2010).
- 1057. “Electronic Data in Litigation: Trends in Discovery & Ethics (ESI Quarterly Spring 2010),” with Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association (“ALI-ABA”) Audio Webcast Program (May 13, 2010).
- 1058. “Understanding and Managing the Risks and Costs of Electronic Discovery,” with Ralph M. Levene, Continuing Legal Education (“CLE”) Program at ConocoPhillips (Houston, TX May 18, 2010).
- 1059. “Hot Topics in ESI Search and Retrieval,” with Jason R. Baron and Brett B. Bordon, at the American Bar Association (“ABA”) Section of Science & Technology Law’s E-Discovery and Digital Evidence (“EDDE”) Committee First Annual Electronic Discovery and Digital Evidence Practitioners’ Workshop (Chicago, IL May 19, 2010).
- 1060. “Lunch Hour E-Discovery Briefing: What the Advisory Committee on Civil Rules Had to Say at the 2010 Conference on Civil Litigation,” with Hon. John M. Facciola, Hon. Paul W. Grimm, and Hon. Ronald J. Hedges, Bureau of National Affairs (“BNA”) Audioconference (May 25, 2010).
- 1061. “Direction(s) From Duke: Are There E-Discovery Rules Changes Ahead?,” with William P. Butterfield, Mary Mack and Hon. David J. Waxse, Fios Webinar (June 2, 2010).
- 1062. “Form of Production; Accessible / Not Reasonably Accessible Information; Cost Sharing / Shifting; Privilege and Federal Rule of Evidence 502,” Guest Lecturer with Patrick L. Oot at Hon. Ronald J. Hedges’ Georgetown University Law Center Introduction to Electronic Discovery and Evidence Course (Washington, DC June 6, 2010).
- 1063. “Some Things You Should Know About E-Discovery,” Continuing Legal Education (“CLE”) Program at Wachtell, Lipton, Rosen & Katz (New York, NY June 16, 2010).

1064. "Current Ethical Issues in Privacy & Information Security for Lawyers," at Practicing law Institute's ("PLI's") Eleventh Annual Privacy and Security Law Institute (New York, NY June 22, 2010).
1065. "Legal Ethics Issues in Cloud Computing," with Jeremy R. Feinberg, at Practicing Law Institute's ("PLI's") Cloud Computing 2010: Is Your Company Ready? (San Francisco, CA June 23, 2010).
1066. "What Keeps Me Up at Night and What Drives Me Crazy About E-Discovery," with Hon. Gail A. Andler, Carmen Oveissi Field, Hon. Elizabeth D. Laporte, and Tami S. Smason, Panel Sponsored by Women in eDiscovery at LegalTech West Coast 2010 (Los Angeles, CA June 24, 2010).
1067. "Reducing Litigation Costs," with Patrick L. Oot, at LegalTech West Coast 2010 (Los Angeles, CA June 24, 2010)
1068. "Deal with the Challenges of Litigation Holds: Pension Committee and Progeny," with Annie Goranson, Robert D. Owen and Farrah Pepper, at The Executive Counsel Institute's E-Discovery for the Corporate Market: Controlling Your E-Discovery Destiny (New York, NY July 12, 2010).
1069. "Select and Develop the Right Relationships and Tools," with Lynn Mestel and Adam Rubinger, at The Executive Counsel Institute's E-Discovery for the Corporate Market: Controlling Your E-Discovery Destiny (New York, NY July 13, 2010).
1070. "Rights of Public and Private Sector Employees in the Electronic Age: Lessons from Quon and Stengart," with Kevin F. Brady and Hon. Ronald J. Hedges, Bureau of National Affairs ("BNA") Audioconference (July 14, 2010).
1071. "The State of Search in 2010 – A Roundtable Discussion with the Bench, Bar, and Experts," with Hon. Paul W. Grimm, Bruce Hedin, and Kenneth J. Withers, Webinar sponsored by H5 (July 19, 2010).
1072. "E-Discovery for New York State Judges," with Hon. James C. Francis IV, Video Broadcast in conjunction with the 2010 Judicial Summer Seminars of the New York State Judicial Institute (July 23, 2010)
1073. "This Really Happened: A Review of Real World Ethical Issues 2010," with Hon. Sheila Abdus-Salaam, Jeremy R. Feinberg, Pery D. Krinsky, and Daniel Weitz, at Practicing Law Institute ("PLI") (New York, NY July 28, 2010).
1074. "Managing Against Security Risks and Embracing the Marketing Opportunities: Systems, Protocols, Contracts, and Other Useful Tools," with Woods K. Abbott, Andy Grover, Kevin R. Haley, and Joel Wuesthoff, Conference on Data Security and Management in Global Commerce sponsored by the Center for Law & Innovation of the University of Maine School of Law (Portland, ME Aug. 5, 2010).
1075. "The Digital Revolution and e-Discovery – Transforming the Legal Profession," with Hon. John M. Facciola, Lucy L. Thompson, Richard L. Marcus, and Stephanie Mendelsohn, Presidential CLE Centre Showcase Program sponsored by the Section of Science & Technology Law of the American Bar Association ("ABA"), at the ABA 2010 Annual Meeting (San Francisco, CA Aug. 7, 2010).
1076. "Electronic Data in Litigation: Trends and Developments (ESI Quarterly Fall 2010)," with Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association (ALI-ABA) Audio Webcast Program (Sept. 14, 2010).

- 1077. "Pre-Litigation Strategies: Creating an E-Discovery Preparedness Plan," with Thomas Y. Allman and Joel M. Mitnick, at the Practising Law Institute's ("PLI's") Electronic Discovery Guidance 2010: What Corporate and Outside Counsel Need to Know (New York, NY Sept. 20, 2010).
- 1078. "Understanding and Managing the Risks and Costs of Electronic Discovery," with John F. Savarese, Continuing Legal Education ("CLE") Program at UBS (Stamford, CT Sept. 23, 2010).
- 1079. "Search Technologies: What These Are, What are the Costs, and What is "Reasonable?" with Hon. Paul W. Grimm and Kenneth J. Withers, at the Federal Judicial Center 2010 E-Discovery Seminar for Federal Judges (Washington, DC Sept. 27, 2010).
- 1080. "Form of Production," with Hon. James C. Francis IV and Hon. Frank S. Maas, at the Federal Judicial Center 2010 E-Discovery Seminar for Federal Judges (Washington, DC Sept. 28, 2010).
- 1081. "Rule 502, Privilege, and Work Product," with Hon. Paul W. Grimm and Kenneth J. Withers, at the Federal Judicial Center 2010 E-Discovery Seminar for Federal Judges (Washington, DC Sept. 28, 2010).
- 1082. "Practitioners' Panel," with William P. Butterfield, Adam C. Losey, and Hon. Barbara J. Rothstein, at the Federal Judicial Center 2010 E-Discovery Seminar for Federal Judges (Washington, DC Sept. 29, 2010).
- 1083. "Discovery 2.0," with Richard G. Braman, Derek G. Howard, John H. Jessen, and Jennifer Kneadle Mason, at the 2010 Annual Meeting of The Sedona Conference Working Group on Document Retention & Production (Paradise Valley, AZ Oct. 7, 2010).
- 1084. "Rule 45 Subpoenas and Non-Party Production Issues in Electronic Discovery: Assessing the Burdens and Costs and Avoiding the Pitfalls," with Anne Marie Gibbs and Babette V.E. Orenstein, Lorman Education Services Teleconference (Oct. 12, 2010).
- 1085. "The Slippery Slope From Preservation to Sanctions: A Review of 2010's Major E-Discovery Cases From Pension Committee Through Victor Stanley, with Kevin F. Brady, Hon. Paul W. Grimm, Hon. Ronald J. Hedges, and Jeane A. Thomas, Bureau of National Affairs ("BNA") Audioconference (Oct. 13, 2010).
- 1086. "An Introduction to Electronic Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton, Rosen & Katz (New York, NY Oct. 14, 2010).
- 1087. "A Short Course in E-Discovery for Judges," with Craig Ball and Hon. Shira A. Scheindlin, at the Delaware Fall Judicial Conference (Wilmington, DE Oct. 15, 2010).
- 1088. "Honey, I Shrunk the Records: The Perils of Preservation," at the National Archives and Records Administration Southeast Region's 2010 E-Records Forum (Atlanta, GA Oct. 19, 2010).
- 1089. "E-Discovery from the Bench," Guest Lecturer with Hon. Shira A. Scheindlin, at William Causey's and Peter Gronvall's Georgetown University Law Center Electronic Discovery Seminar (Washington, DC Oct. 19, 2010).
- 1090. "How to Successfully Manage Your E-Discovery Matter: Project Management 101," with David K. Gaston, Patrick McColloch, and Leslie Wharton, at IE Discovery's Third Annual Electronic Discovery Symposium for Governmental Agencies (Washington, DC Oct. 20, 2010).

1091. "Cost Containment: Preservation Techniques for Litigation," with Jason R. Baron and Jennifer Mason, American Records Management Association ("ARMA") International Webinar (Oct. 25, 2010).
1092. "Understanding and Managing the Risks and Costs of Electronic Discovery," with Ralph M. Levene, Continuing Legal Education ("CLE") Program at UBS (Weehawken, NJ Oct. 26, 2010).
1093. "Rule 45 Subpoenas and Non-Party Production Issues in Electronic Discovery: Assessing the Burdens and Costs and Avoiding the Pitfalls," with Anne Marie Gibbs and Babette V.E. Orenstein, Lorman Education Services Teleconference (Oct. 28, 2010).
1094. "An Introduction to Electronic Discovery," Guest Lecturer with Adam I. Cohen at Emily Gold Waldman's Pace Law School Civil Procedure 1 Course (New York, NY Nov. 1, 2010).
1095. "Ethics and the Use of Technology," Guest Lecturer at Jeremy R. Feinberg's Columbia Law School Professional Responsibility Course (New York, NY Nov. 1, 2010).
1096. "Achieving Proportionality in Search," with Jason R. Baron, Hon. Paul W. Grimm, and Ralph C. Losey, at Capital One's Second Annual Seminar on Moving Towards Proportionality in E-Discovery (McLean, VA Nov. 3, 2010).
1097. "Achieving Proportionality in the Government/Regulatory Context," with Hon. John M. Facciola, Andrew D. Goldsmith, Tracy Greer, and John Woods, at Capital One's Second Annual Seminar on Moving Towards Proportionality in E-Discovery (McLean, VA Nov. 3, 2010).
1098. "TREC Legal Track 2009 Results & 2010 Update," with Jason R. Baron, at the Birds of a Feather Gathering re: Achieving Quality in E-Discovery Searches (San Francisco, CA Nov. 5, 2010).
1099. "You Say, 'Toe-May-Toe,' and I Say, 'Toe-Mah-Toe': Differences in How Records Managers and Lawyers Use Search Technology to Accomplish Their Goals," with Terry Sweeney, at the American Records Management Association ("ARMA") International / International Legal Technology Association ("ILTA") Legal Information Technology Conference 2010 ("Lit-Con 2010") on Mitigating Risk and Maximizing Revenues with Information Governance (San Francisco, CA Nov. 6, 2010).
1100. "Cost Containment: Preservation Techniques for Litigation," with Jason R. Baron and Jennifer Mason, at the American Records Management Association International (ARMA International) 55th Annual Conference & Expo (San Francisco, CA Nov. 7, 2010).
1101. "An Introduction to Electronic Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton, Rosen & Katz (New York, NY Nov. 11, 2010).
1102. "TREC 2010 Legal Track Overview," with Bruce Hedin, at the National Institute of Standards and Technology's ("NIST's") TREC 2010 Conference (Gaithersburg, MD Nov. 17, 2010).
1103. "Ethics Game Show: Some Real World 'E-thical' Issues," with Hon. John M. Facciola, Hon. James C. Francis IV, and Hon. Paul W. Grimm, at the Georgetown University Law Center's Eighth Annual Advanced E-Discovery Institute (Crystal City, VA Nov. 19, 2010).
1104. "Cloud & Web Computing: How Courts are Responding to New Technologies in Litigation," with Hon. Ronald J. Hedges and Jon A. Neiditz, at American Law Institute / American Bar Association ("ALI-

ABA”) Video Webcast (Philadelphia, PA Dec. 2, 2010).

- 1105. “Frontiers of E-Discovery: What You Need to Know About Predictive Coding,” with Jason R. Baron and Bennett B. Borden, Virtual LegalTech Webinar (Dec. 6, 2010).
- 1106. “Some Things You Should Know About Search,” at the Connecticut Chapter of Women in eDiscovery (Hartford, CT Dec. 7, 2010).
- 1107. “A Judicial Training Program on Concept Search,” with Karl A. Schieneman, Live Program and Webinar (New York, NY Dec. 9, 2010).
- 1108. “Judicial Perspective on Concept Searching and Predictive Coding,” with Chris Dale, Hon. John M Facciola, Hon. Paul W. Grimm, and Karl Schieneman, JurInnov Ltd. ESIBytes Podcast (Dec. 20, 2010).

2009 TALKS

- 1109. “Complex Cases and Structured Data Discovery from an Attorney’s Point of View,” with Alexander Arata, Todd J. Marlin, and Babette V.E. Orenstein, at LegalTech New York 2009 (New York, NY Feb. 2, 2009).
- 1110. “Buyer Beware: How TREC Can Help You Evaluate Your E-Discovery Investments,” with Jason R. Baron, Dan Brassil, Douglas W. Oard, and Venkat Rangan, H5 and Clearwell Systems E-Discovery Webinar (Mar. 19, 2009).
- 1111. “Current Issues in Privilege, Ethics, and Compliance,” with David Gruenstein, CLE at Ziff Brothers Investments (New York, NY Mar. 23, 2009).
- 1112. “Achieving Quality in the E-Discovery Process,” with Jason R. Baron, Macyl A. Burke, Kenneth J. Withers, and Joe Looby, The Sedona Conference Voices From the Desert Webinar Series (Mar. 20, 2009).
- 1113. “Ethical Aspects of Privacy and Information Security for Lawyers,” at Practicing Law Institute’s (“PLI’s”) Tenth Annual Institute on Privacy & Security Law (New York, NY June 23, 2009).
- 1114. “A Primer on Electronic Discovery for Ziff Brothers Investments, LLC,” CLE at Ziff Brothers Investments, LLC (New York, NY June 25, 2009).
- 1115. “Ethics: Professional Obligations in eDiscovery, Part I,” with Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute /American Bar Association (“ALI-ABA”) Audio Webcast Program (June 30, 2009).
- 1116. “An Introduction to Electronic Discovery for New York State Court Attorneys,” with Jeremy R. Feinberg, Program sponsored by the State Court Counsel Committee for the State Bar (New York, NY July 15, 2009).
- 1117. “Multiple Representation, Privilege, and Ethical Issues in Legal Practice Today,” with Evan J. Farber and David Gruenstein, CLE at Ziff Brothers Investments, LLC (New York, NY July 16, 2009).
- 1118. “This Really Happened: A Review of Real World Ethical Issues 2009,” with Hon. Sheila Abdus-Salaam, Jeremy R. Feinberg, Pery D. Krinsky, and Paul D. Sarkozi, at Practicing Law Institute (“PLI”) (New

York, NY July 29, 2009).

- 1119. "Search Tools and Filtering Technologies," with Jason R. Baron and Herbert L. Roitblat, at the Georgetown University Law Center E-Discovery Training Academy (Washington, DC Aug. 4, 2009).
- 1120. "Ethics and E-Discovery Roundtable," with Hon. Ronald J. Hedges and Browning E. Marean III, at the 2009 International Legal Technology Association Conference: Leading Technology / Optimizing Value ("ILTA '09") (National Harbor, MD Aug. 26, 2009).
- 1121. "An Introduction to Electronic Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton Rosen & Katz (New York, NY Sept. 17, 2009).
- 1122. "Technology Solutions to Information Management Problems: Increasing Efficiency and Reducing Costs Through the Use of Emerging Data Management Applications and Advanced Search Tools," with Jason R. Baron and Ronni D. Solomon, at the American Conference Institute's 7th Annual Advanced Forum on Document Management & E-Discovery (Philadelphia, PA Sept. 22, 2009).
- 1123. "Document Review," with Richard G. Braman and Joseph P. Guglielmo, at The Sedona Conference Working Group on Electronic Document Retention & Production 2009 Annual Meeting (Atlanta, GA Oct. 2, 2009).
- 1124. "Pre-Litigation Strategies: Putting Technology in Your Corner," with Ashish S. Prasad, at Practicing Law Institute's ("PLI's") Electronic Discovery Guidance 2009: What Corporate and Outside Counsel Need to Know (New York, N.Y. Oct. 6, 2009).
- 1125. "The View From the Other Side of the Table: How to Get What You Want From the Meet-and-Confer (or its Equivalent) Without Shooting Yourself in the Foot," with Andrew D. Goldsmith, at IE Discovery's Second Annual Electronic Discovery Symposium for Governmental Agencies (Washington, DC Oct. 6, 2009).
- 1126. "Sedona Conference Update: Achieving Quality in the E-Discovery Process," with Thomas Y. Allman, and Jason R. Baron, and Mary Mack, Fios Inc. Webcast (Oct. 7, 2009).
- 1127. "International Disclosure and Privacy: Minimize Risk and Maximize Compliance," with E. Regan Adams, Alexandra E. Chopin, Conor R. Crowley, and Thomas F. Matzen, at the Masters Conference for Legal Professionals – Global Corporate Change: Navigating Discovery, Risk, and Security (Washington, DC Oct. 13, 2009).
- 1128. "A Real-World View of E-Discovery from Outside Counsel's Perspective," Guest Lecturer at Joel Wuesthoff's University of Maine Law School e-Discovery and Forensics Course (Portland, ME Oct. 19, 2009).
- 1129. "This Really Happened: A Review of Real World Ethical Issues 2009," with Jeremy R. Feinberg, Paul I. Marx, Edward Mevec, and Deborah A. Scalise, at the Westchester County Bar Association (Yonkers, NY Oct. 20, 2009).
- 1130. "This Really Happened: A Review of Real World Ethical Issues 2009 for New York State Court Attorneys," with Jeremy R. Feinberg, Michael Klein, Melissa Nickson, and David Tennant, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (Rochester, NY Oct. 28, 2009).

- 1131. "Ethics in the Electronic Age for New York State Court Attorneys," with Jeremy R. Feinberg, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (Rochester, NY Oct. 28, 2009).
- 1132. "What Does it Take to Achieve a Quality E-Discovery Process?: Using Sampling, Metrics and Other Methods," with Jason R. Baron, Alexandra E. Chopin, and David Lasater, at Capital One Financial Corporation's First Annual Seminar on E-Discovery: The Future of Search (McLean, VA Nov. 10, 2009).
- 1133. "Advanced Search and Retrieval Technology," with Jason R. Baron, Ralph C. Losey, and Ellen Voorhees, at The Georgetown University Law Center Advanced E-Discovery Institute 2009 (Washington, DC Nov. 13, 2009).
- 1134. "Ethics: Professional Obligations in eDiscovery, Part II," with Hon. Ronald J. Hedges and Jeane A. Thomas, American Law Institute / American Bar Association (AL-ABA) Audio Webcast Program (Nov. 16, 2009).
- 1135. "An Introduction to Electronic Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton, Rosen & Katz (New York, NY Nov. 18, 2009).
- 1136. "What Would You Do? The Ethics Game Show," with Jeremy R. Feinberg, Hon. Ira S. Warshawsky, Peter A. Zablotsky, and Hon. Hope S. Zimmerman, at the Nassau County Bar Association (Mineola, NY Nov. 19, 2009).
- 1137. "An Update on Legal and Ethical Issues Involving Metadata, Social Networking, and Electronic Discovery," CLE at Ziff Brothers Investments, LLC, (New York, NY Nov. 30, 2009).
- 1138. "This Really Happened: A Review of Real World Ethical Issues 2009 for New York State Court Attorneys," with Maryita Dobiel, Jeremy R. Feinberg, and Joanne Haelen, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute (Saratoga, NY Dec. 1, 2009).
- 1139. "Ethics in the Electronic Age for New York State Court Attorneys," with Jeremy R. Feinberg, at the 2009/2010 Legal Update Program sponsored by the New York State Judicial Institute, (Saratoga, NY Dec. 1, 2009).
- 1140. "Criminalization of Spoliation: Answers to the Questions That Keep You Up at Night," with Patrick J. Burke, Andrew D. Goldsmith, Hon. Andrew J. Peck, and Steven P. Solow, at the International Quality and Productivity Center (IQPC) 8th Annual eDiscovery Conference (New York, NY Dec. 8, 2009).
- 1141. "Cross Border E-Discovery: Managing the Risks and Challenges," with E. Regan Adams and Alysia A. Solow, at the New York City Chapter of Women in eDiscovery, (New York, NY Dec. 17, 2009).
- 1142. "The Case for Cooperation in E-Discovery," with William P. Butterfield, Hon. Andrew J. Peck, and Karl A. Schieneman, JurInnov Ltd. Podcast (Dec. 21, 2009).

2008 TALKS

- 1143. "Commentary on Achieving Quality Control Over the E-Discovery Process: A Primer on Project Management, Methods & Metrics Version 3.0," with Jason R. Baron, Macyl A. Burke, and Thomas P. Wisnowski, at the 2008 Mid-Year Meeting of The Sedona Conference Working Group on Electronic Document Retention & Production (New Orleans, LA May 15, 2008).

- 1144. "Practicing What We Preach: Current Issues in Information Management, Legal Practice & Legal Ethics," at Practising law Institute's ("PLI's") Ninth Annual Institute on Privacy & Security Law (New York, NY June 24, 2008).
- 1145. "An Introduction to Electronic Discovery for New York State Judicial Officers," with John Vagelatos, at the 2008 Judicial Summer Seminars of the New York State Judicial Institute (Rye Brook, NY June 26, 2008).
- 1146. "An Introduction to Electronic Discovery for New York State Judicial Officers," with Jeremy R. Feinberg, at the 2008 Judicial Summer Seminars of the New York State Judicial Institute (Rye Brook, NY July 10, 2008).
- 1147. "An Introduction to Electronic Discovery for New York State Judicial Officers," with Jeremy R. Feinberg, at the 2008 Judicial Summer Seminars of the New York State Judicial Institute (Rye Brook, NY Aug. 28, 2008).
- 1148. "Native Review and Production," at the Kroll Ontrack 2008 E-Discovery Certification Course (Eden Prairie, MN Sept. 12, 2008).
- 1149. "An Introduction to E-Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton, Rosen & Katz (New York, NY Sept. 23, 2008.).
- 1150. "An Introduction to E-Discovery for New Associates," with Luis A. McNish, at Wachtell, Lipton, Rosen & Katz (New York, NY Oct. 14, 2008).
- 1151. "Significant Ethical Issues Facing Inside Counsel: What In-House Counsel & Those Who Advise Them Need to Know," with Paul Dutka, Jeremy R. Feinberg, and James W. Paul, at The Association of the Bar of the City of New York (New York, NY Oct. 15, 2008).
- 1152. "Managing eDiscovery Risk While Driving Productivity and Reducing Costs" with Michael Patrick Sugrue, Andreae M. Selleck, and Emily Stapf, at the Masters Conference for Legal Professionals (Washington, DC Oct. 16, 2008).
- 1153. "Discovery Disputes: Addressing the Complex Obligations of e-Discovery," with Gary A. Adler, David M. Greenwald, and Ashish S. Prasad, at Practising law Institute's ("PLI's") Electronic Discovery and Retention Guidance for Corporate Counsel 2008 Program (New York, NY Nov. 5, 2008).
- 1154. "A Primer on Electronic Discovery for the Suffolk County Bar Association / Suffolk Academy of Law," with Jeremy R. Feinberg (Hauppauge, NY Nov. 6, 2008).
- 1155. "Draft Toolkit for Volunteer Mediators / How to Roll Out a Court-Annexed eDiscovery ADR Program," with Matthew I. Cohen and Sonya L. Sigler, at the 2008 Annual Meeting of The Sedona Conference Working Group on Electronic Document Retention & Production (Rancho Mirage, CA Nov. 14, 2008).
- 1156. "A Brief Discussion of the 2008 TREC Legal Track," with Jason R. Baron, at H5 Cocktails and Dinner in connection with the Georgetown University Law Center Advanced E-Discovery Institute (Washington, DC Nov. 19, 2008).
- 1157. "Colloquium on the Future of Commercial Litigation in New York: Developing a Cost-Efficient Judicial Process for the Electronic Age," Moderator of the morning session with Thomas Y. Allman, James M. Bergin, Hon. John L. Carroll, Hon. Elizabeth Hazlitt Emerson, and Kenneth J. Withers, sponsored by the

New York State Judicial Institute at The Association of the Bar of the City of New York (New York, NY, Dec. 1, 2008).

1158. “Finding a Better Way to Search: Benchmarking E-Discovery Methods,” with Jason R. Baron, Robert S. Bauer, Julia Brickell, and Hon. Paul W. Grimm, H5 Webinar (Dec. 10, 2008).
1159. “A Primer on Electronic Discovery for the Departmental Disciplinary and Policy Committees of the New York Supreme Court, Appellate Division, First and Second Judicial Departments,” with Jeremy R. Feinberg (New York, NY, Dec. 11, 2008).

EXHIBIT B

Multi-Faceted Recall of Continuous Active Learning for Technology-Assisted Review

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ABSTRACT

Continuous active learning achieves high recall for technology-assisted review, not only for an overall information need, but also for various facets of that information need, whether explicit or implicit. Through simulations using Cormack and Grossman's TAR Evaluation Toolkit (SIGIR 2014), we show that continuous active learning, applied to a multi-faceted topic, efficiently achieves high recall for each facet of the topic. Our results assuage the concern that continuous active learning may achieve high overall recall at the expense of excluding identifiable categories of relevant information.

Categories and Subject Descriptors: H.3.3 Information Search and Retrieval: Search process, relevance feedback.

Keywords: Technology-assisted review; TAR; predictive coding; electronic discovery; e-discovery; test collections; relevance feedback; continuous active learning; CAL.

1. INTRODUCTION

The objective of technology-assisted review ("TAR"), first described in the context of electronic discovery ("eDiscovery") in legal matters [6], is to bring to the attention of a document reviewer substantially all relevant documents, and relatively few non-relevant ones, thereby maximizing recall and minimizing reviewer effort. The best reported results for TAR employ continuous active learning ("CAL"), in which a learning method presents the most-likely relevant documents to the reviewer in batches, the reviewer labels each document in each successive batch as relevant or not, and the labels are fed back to the learning method [6]. While CAL has been shown to achieve high recall with less effort than competing methods (including exhaustive manual review [7] and non-interactive supervised learning [6]), it has been suggested that CAL's emphasis on the most-likely relevant documents may bias it to prefer documents like the

ones it finds first, causing it to fail to discover one or more important, but dissimilar, classes of relevant documents [11, 8].

In legal matters, an eDiscovery request typically comprises between several and several dozen requests for production ("RFPs"), each specifying a category of information sought. A review effort that fails to find documents relevant to each of the RFPs (assuming such documents exist) would likely be deemed deficient. In other domains, such as news services, topics are grouped into hierarchies, either explicit or implicit. A news-retrieval effort for "sports" that omits articles about "cricket" or "soccer" would likely be deemed inadequate, even if the vast majority of articles – about baseball, football, basketball, and hockey – were found. Similarly, a review effort that overlooked relevant short documents, spreadsheets, or presentations would likely also be seen as unsatisfactory.

We define a "facet" to be any identifiable subpopulation of the relevant documents, whether that subpopulation is defined by relevance to a particular RFP or subtopic, by file type, or by any other characteristic. Our objective is to determine whether CAL is able to achieve high recall over all facets, regardless of how they are identified. To this end, we used Cormack and Grossman's TAR Evaluation Toolkit ("Toolkit"),¹ grouping together the four RFPs supplied with the Toolkit as one overall topic, and treating each of the four RFPs as facets. We then computed recall as a function of review effort for the overall topic, as well as for each of the facets. We also computed recall separately for facets consisting of short documents, word-processing files, spreadsheets, and presentations.

We repeated our experiments, importing the Reuters RCV1-v2 dataset [10] into an adapted version of the Toolkit, using each of the RCV1-v2 top-level subject categories as an overall information need, and treating each of the 82 bottom-level subject categories as a facet.

2. TREC LEGAL TRACK EXPERIMENTS

In the Toolkit, we created a new overall topic, "all," by combining the topics supplied with the Toolkit (topics 201, 202, 203, and 207 from the TREC 2009 Legal Track [9]) as follows: As a seed set, we used 1,000 documents selected at random from the "seed query" hits in the Toolkit for the four topics [6, Table 3, p. 155]; as training and gold standards, we used the union of the respective standards supplied for the four topics, with the effect that, for both training and

^{*}The views expressed herein are solely those of the author and should not be attributed to her firm or its clients.

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ACM 978-1-4503-3621-5/15/08.

DOI: <http://dx.doi.org/10.1145/2766462.2767771>.

¹<http://cormack.uwaterloo.ca/cormack/tar-toolkit/>.

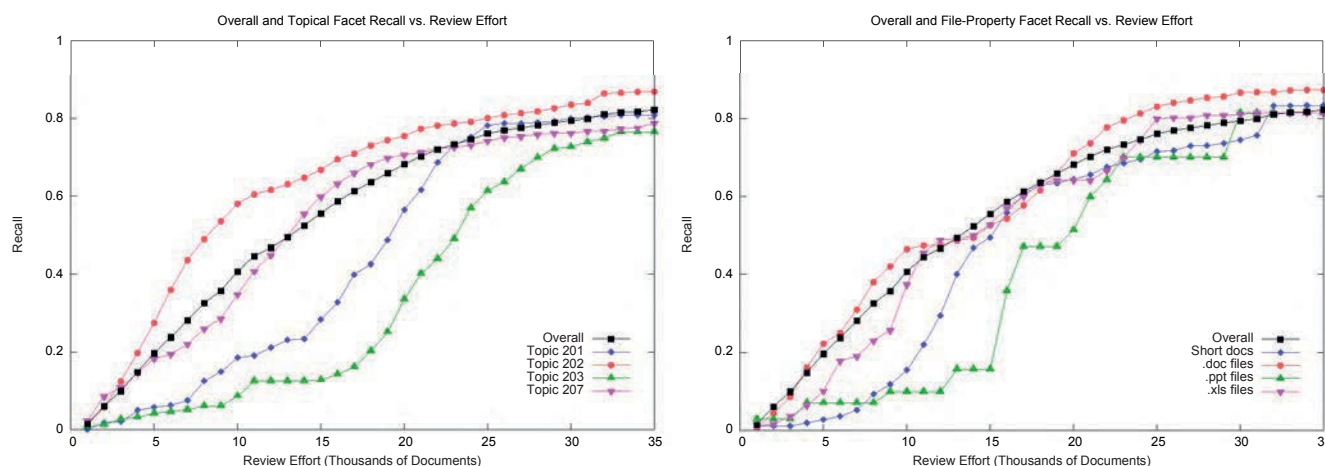


Figure 1: Overall and facet recall as a function of effort for the four TREC 2009 Legal Track topics. The left panel shows recall for an overall review effort, as well as recall with respect to each of four facets represented by the TREC topics. The right panel shows overall recall, as well as recall for facets represented by short documents, word-processing files, presentations, and spreadsheets.

evaluation, a document was considered relevant to the overall topic, “all,” if it was relevant to any of the four facets represented by the Toolkit-supplied topics. We ran the “ac-tkeysvm” CAL implementation, without modification, and captured the ordered list of documents presented for review. We computed recall for the “all” topic, and for each facet, at each position in the list.

We further evaluated recall with respect to four other facets: “short,” “.doc,” “.xls,” and “.ppt,” representing short documents (< 1K bytes), word-processing files, spreadsheets, and presentations, respectively. Our results are shown in Figure 1. While it is apparent that, at the outset, topics 201 and 203, as well as short documents and presentations, lag behind; at high recall levels, there is little variance among the recall levels of the facets.

3. RCV1-V2 EXPERIMENTS

We next adapted the Toolkit to work with the RCV1-v2 dataset [10]. We used tf-idf Porter-stemmed word features, and SVM^{light}, following accepted practice [10]. We used as information needs the four top-level categories in the RCV1-v2 subject hierarchy, titled “corporate, industrial,” “economics,” “government and social,” and “markets,” with the corresponding subject codes, “CCAT,” “ECAT,” “GCAT,” and “MCAT,” respectively. As facets, we used the bottom-level categories in the RCV1-v2 subject hierarchy. We ignored the intermediate levels, as they are simple unions of the bottom-level categories. For seed queries, we used the titles of the top-level categories. We used the RCV1-v2 labels as both the training and gold standards.

Figure 2 shows overall and facet recall, as a function of review effort, for each of the four RCV1-v2 overall information needs. The results mirror those for the TREC 2009 dataset; however, a much higher level of recall is achieved, and convergence occurs as that higher level is approached. It appears that convergence coincides with a decline in marginal precision which, for these experiments, takes place in the neighborhood of 90% recall.

Among the results in Figure 2, one facet – “GMIL” – is an obvious outlier. Its recall reaches 80% only with double the review effort required for all other facets. In the RCV1-v2 collection, only five documents are labeled relevant to GMIL (bottom-level topic title: “Millennium Issues”). We examined these documents and found that four of them contain the phrase “millennium bug”; see, for example, the left panel of Table 1. We then searched the dataset and found 141 documents containing this same phrase, of which four were labeled relevant to GMIL, 48 were labeled relevant to some other facet of GCAT, and 93 were not labeled relevant to any facet. The right panel of Table 1 shows one such document. On reviewing these and other examples, we were unable to glean the criteria used to distinguish relevant from non-relevant documents, and thus attribute this outlier result to apparent mislabeling in the RCV1-v2 dataset.

4. WHEN TO STOP REVIEW

The objective of finding substantially all relevant documents suggests that CAL – or any other review effort – should continue until high recall has been achieved, and achieving higher recall would require disproportionate effort. Measuring recall is problematic, due to imprecision in the definition and assessment of relevance [3, 12, 8], and the effort, bias, and imprecision associated with sampling [2, 1, 8]. Accordingly, it is difficult to specify an absolute threshold value that constitutes “high recall,” or to determine reliably that that such a threshold had been reached. Arguably, 75% to 80% recall would be sufficient for the TREC review detailed in Figure 1, because at that level, the recall for the facets is uniformly high, and a higher level can be achieved only with disproportionate effort. On the other hand, 90% or higher recall would be necessary to establish the adequacy of the RCV1-v2 reviews detailed in Figure 2. Only above 90% overall recall is the recall for facets uniformly high, and 90% recall is achievable with proportionate effort.

We suggest that, as an alternative to a fixed recall target, marginal precision might be a better indication of the completeness of a CAL review. In all of our experiments,

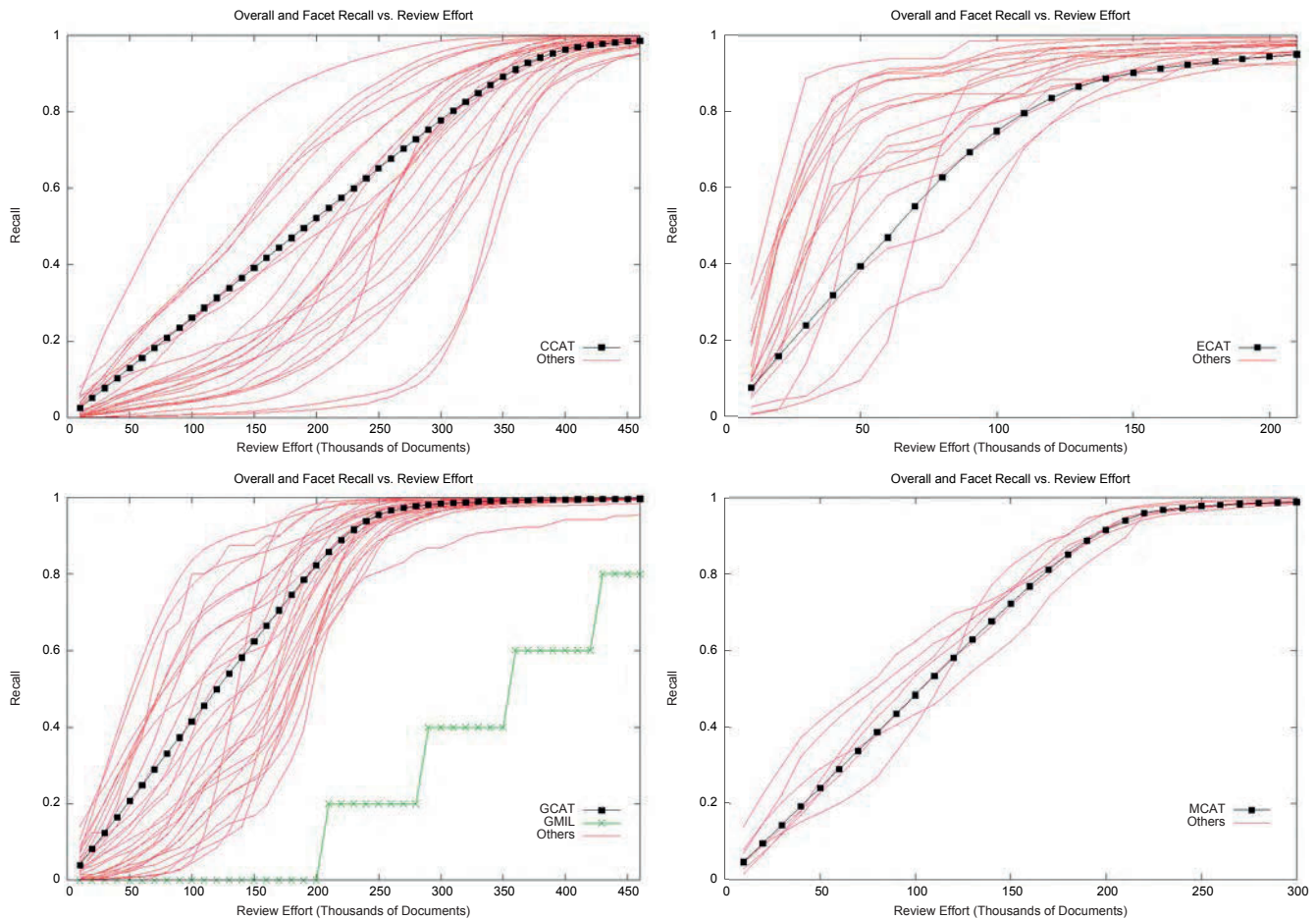


Figure 2: Overall and facet recall as a function of effort for the RCV1-v2 dataset.

we observed that the precision of each successive batch of 1,000 documents rose rapidly to nearly 100%, was sustained at nearly 100%, and then fell off. Table 2 illustrates that, in these experiments, stopping the review when marginal precision falls below one-tenth of its previously sustained value is a good predictor of high recall for the overall information need, as well as the facets, with proportionate effort.

5. DISCUSSION

A sign test shows our result to be significant ($p < 0.03$), by virtue of being observed for six of six separate experiments.

CAL is a greedy method that always chooses the most-likely relevant documents for review. It is to be expected that, at the outset, it chooses documents representing the easiest-to-identify facets, due to their subject matter, file properties, or abundance. As those documents are exhausted, others representing new facets become the most-likely relevant documents, until no more likely relevant documents remain. Only when the most-likely relevant documents from all facets have been exhausted, does marginal precision drop to a *de minimus* level.

While our findings suggest that it may be unnecessary, neither our theory of CAL's operation nor our results suggest that it would be harmful to train the learning method using additional seed documents – found by ad hoc means

– to represent important facets that are known to the reviewer at the outset, or become known during the course of the review process [5].

Our experiments suggest that when a review achieves sustained high precision, and then drops off substantially, one may have confidence that substantially all facets of relevance have been explored. In addition to offering a potentially better prediction of completeness, precision can be readily calculated throughout the review, while recall cannot. Further research is necessary to determine the extent to which marginal precision may afford a reliable quantitative estimate of review completeness, including coverage of different facets of relevance.

While sharing general motivation with efforts to achieve novelty and diversity in ad hoc retrieval [4], CAL seeks to achieve high recall rather than to reduce redundancy, and does so using a depth-first rather than breadth-first approach. We conducted an auxiliary experiment to investigate whether a strategy of using separate reviews for each facet would improve on the combined review strategy reported here. We found that the overall effort required to achieve 75% recall for every facet was higher for the separate review strategy. It remains to be seen whether other diversity-focused methods might improve on the purely depth-first results presented here.

Labeled “Relevant” in RCV1-v2

Okura up on millennium bug software demand.
TOKYO 1997-08-15 Shares of Okura & Co Ltd surged on Friday afternoon due to the expectation that its software business would benefit from the so-called millennium bug problem. The stock was the top percentage gainer on the Tokyo Stock Exchange’s first section in the afternoon session. Okura’s shares were up 55 yen at 455 yen as of 0435 GMT. (c) Reuters Limited 1997-06-16

Labeled “Not relevant” in RCV1-v2

Complete Business Solutions gets contract.
FARMINGTON HILLS, Mich. 1997-06-16 Complete Business Solutions Inc said early Monday that South Carolina Electric & Gas Co has awarded it a contract to manage and implement its Year 2000 code conversion project and deal with issues related to the “millennium bug”. The project is expected to require changes to over three million lines of code at the utility and to be in the multi-million dollar range, Complete Business said. The company received the contract as part of a bidding process that included six other vendors. SCE&G is the principal subsidiary of SCANA Corp. ((– New York Newsdesk 212-859-1610)) (c) Reuters Limited 1997

Table 1: Conflicting relevance labels for category GMIL (bottom-level topic title: “Millennium Issues”). Of 141 documents in the RCV1-v2 collection containing the phrase “millennium bug,” four were labeled “relevant,” while 137 were labeled “not relevant.”

| | TREC | CCAT | ECAT | GCAT | GCAT (excl. GMIL) | MCAT |
|------------------------|-------|-------|-------|-------|-------------------|-------|
| Review Effort (K-docs) | 34 | 436 | 166 | 281 | 281 | 237 |
| Overall Precision | 0.587 | 0.856 | 0.664 | 0.848 | 0.848 | 0.840 |
| Overall Recall | 0.818 | 0.979 | 0.919 | 0.996 | 0.996 | 0.972 |
| Overall F_1 | 0.684 | 0.913 | 0.771 | 0.916 | 0.916 | 0.901 |
| Lowest Facet Recall | 0.766 | 0.924 | 0.890 | 0.200 | 0.863 | 0.958 |

Table 2: Review effort and effectiveness when marginal precision (measured on the last batch of 1,000 documents) falls below 10%. Effort is measured in terms of thousands of documents reviewed; effectiveness is measured in terms of overall precision, recall, and F_1 , as well as the lowest recall obtained for any facet.


6. CONCLUSION

For all experiments, our results are the same: CAL achieves high overall recall, while at the same time achieving high recall for the various facets of relevance, whether topics or file properties. While early recall is achieved for some facets at the expense of others, by the time high overall recall is achieved – as evidenced by a substantial drop in overall marginal precision – all facets (except for a single outlier case that we attribute to mislabeling) also exhibit high recall. Our findings provide reassurance that CAL can achieve high recall without excluding identifiable categories of relevant information.

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EXHIBIT C

 KeyCite Yellow Flag - Negative Treatment
Distinguished by [In re Valsartan, Losartan, and Irbesartan Products Liability Litigation](#), D.N.J., December 2, 2020

2018 WL 1146371

Only the Westlaw citation is currently available.
United States District Court, N.D. Illinois, Eastern Division.

IN RE BROILER CHICKEN
ANTITRUST LITIGATION

This Document Relates to: All Actions

Case No. 1:16-cv-08637

Signed 01/03/2018

**ORDER REGARDING SEARCH METHODOLOGY
FOR ELECTRONICALLY STORED INFORMATION**

HON. [JEFFREY T. GILBERT](#), U.S. MAGISTRATE JUDGE

*1 This Order Regarding Search Methodology for Electronically Stored Information (“Search Methodology Order”) shall govern the Parties in the above-captioned case whether they currently are involved or become so in the future, and any related actions that may later be consolidated with this case (collectively, the “Litigation”).

I. DOCUMENT SOURCE DISCLOSURES

A. **Transparency:** With the goal of permitting requesting Parties an appropriate level of transparency into a producing Party's electronic search process, without micromanaging how the producing Party meets its discovery obligations and without requiring the disclosure of attorney work product or other privileged information, the Parties will endeavor to be reasonably transparent regarding the universe of documents subject to targeted collections or culling via search terms and/or TAR/CAL.

B. Pre-Search Deduplication & Culling of Collected Data:

1. **De-Duplication:** Before running either of the Search Processes below in ¶ II, data should be de-duplicated by hash value across all agreed or Court-ordered document custodians.

2. **Email Threading:** If the producing Party's search software has the capability, then the producing Party may choose to only include inclusive emails in the data set subject to the Keyword and/or TAR/CAL Search Process, including the data set against which keyword searches are tested. A producing Party will disclose whether or not they are testing search terms in a set of data that excludes non-inclusive emails. Non-inclusive emails do not need to be searched, reviewed, or produced in this matter. *See* ESI Protocol, Dkt. 459, ¶ IV(D)(1).

3. **Email Domains:** Should the requesting Party want certain email domains excluded from the data set against which search terms are tested, the requesting Party must provide a list of such domain names to the producing Party ahead of the producing Party's testing of search terms. Likewise, if the producing Party identifies domains that it believes should be eliminated, it will produce a list of those domain names to the requesting Party. *See* ESI Protocol, ¶ IV(D)(2). Plaintiffs' analysis to date of the Florida AG productions made by certain Defendants indicates there are a large variety of industry email newsletters that can be culled (*i.e.*, excluded from a Defendant's review and production of documents) where there are no internal forwards of such documents after their receipt. Plaintiffs agree to provide a list of these domain names prior to Defendants undertaking a search of their data.

4. **Targeted Collections:** Only documents a producing Party intends to subject to electronic searching parameters should be included in the data set against which search terms are tested. As an example, a centralized, non-custodial folder of responsive Agri Stats reports that a party intends to produce in its entirety (to the extent not privileged) should not be included in the data set against which search terms are tested.

5. **Exception Reporting:** For any documents not otherwise identified as system or operating files, the producing Party must disclose processing exceptions that are unresolved at the end of the discovery period, such as documents that cannot be opened due to encryption or other issues.

*2 6. **Disclosure of Other Culling Parameters Required:** A producing Party is permitted to cull data

using the agreed-upon custodial and non-custodial sources, agreed-upon date parameters, and agreed-upon search terms (if applicable), and a producing Party is permitted to remove known system or operating files, such as those that appear on the National Software Reference Library (NSRL) hash list. As such, the Parties may cull entire file directories from computer hard drives that contain Program Files, Program Data, SWTOOLS, Windows Operating System files, etc. For those excluded directories, the Parties will only conduct searches on user-created content that is reviewable and likely to yield relevant content. To the extent a producing Party elects to use additional culling parameters, those parameters will be disclosed.

II. SEARCH METHODS

The following TAR/CAL and Keyword Search Processes govern how collected data may be electronically culled in this matter.

A. TAR/CAL Search Process:

1. Use of Search Terms with TAR/CAL:

a. No later than December 22, 2017, the requesting Party will propose to a producing Party a limited number of Document Custodians for whom, across their email only, it requests that no search term pre-culling be used prior to applying TAR/CAL during the review process. However, the other data culling parameters described in ¶ I(B) may be applied to these Document Custodians, including to their email.

b. No later than January 12, 2018, the Parties will meet and confer on any issues or disputes regarding the requesting Party's proposals.

2. Producing Party TAR/CAL Disclosures:

a. No later than January 19, 2018, a producing Party that elects to use TAR/CAL will disclose the following information regarding its use of a TAR/CAL process: (a) the name of the TAR/CAL software and vendor, (b) a general description of how the producing Party's TAR/CAL process will work, including how it will train the algorithm, such as using exemplars, keyword search strings, or some other method, (c) a general description of the categories or sources of the documents included or excluded from the TAR/CAL

process, and (d) what quality control measures will be taken.

3. Requesting Party Response:

a. Within 7 days of receiving a producing Party's TAR/CAL Disclosures, the requesting Party may raise with the producing Party any concerns with the proposed TAR/CAL process or categories of documents that it proposes should be excluded from the TAR/CAL process. A requesting Party may also propose any exemplars it proposes be used to train a TAR/CAL tool or narrow keyword search strings it proposes be used to generate exemplars to train a TAR/CAL tool. A producing Party retains the right to reject and oppose any such requests, subject to resolution by the Special Master and/or the Court.

4. Cooperation: The Parties agree to work together in good faith to resolve any differences that they may have over the producing Party's use of TAR/CAL and its processes, recall, and validation proposals. If an agreement cannot be timely reached, then the Parties agree to raise this issue with the Special Master and to follow her direction absent the showing of good cause to the contrary, and subject to the Parties' rights to petition the Court for review of or relief from any decision or guidance provided by the Special Master.

B. Keyword Search Process:

1. Iterative Process: Developing efficient keyword search terms is an iterative process and will require transparent and cooperative efforts by both the producing and requesting Party; however, it is important to set certain limits in order to effectively and efficiently manage time and expense.

2. Search Software Disclosures: No later than January 12, 2018, the producing Parties will disclose any search software they have decided to use (including version number) and that software's default stop/noise words and search language syntax. Additionally, the Parties should use best efforts to disclose information that answers these questions regarding their search tool:

***3 a.** What stop words have been excluded from the index (if different than the default stop words for the tool)?

- b. Can searches be constrained by upper- and lowercase?
- c. Can numbers and single letters be searched?
- d. Are there characters that cannot be searched or are treated as spaces or ignored?
- e. How are diacritics resolved?
- f. Can searches be run on metadata fields?
- g. Are proximity-limited search terms subject to an evaluation order, e.g., will terms structured X w/5 Y yield hits if the text reads Y w/5 X?
- h. Does the tool offer synonym searching?
- i. How does the tool account for common misspellings?

3. First Phase Search Term Proposals:

- a. *Producing Party Proposes an Initial Set of Search Terms:* No later than January 19, 2018, the producing Party will propose a set of search terms. The producing Party's proposal will include, to the extent known, semantic synonyms and common spellings of the keywords proposed. Where a producing Party seeks to exclude false positives (aka, "noise hits") by modifying or excluding certain keywords, then it will supply contextual examples of such false positives to explain why they must be excluded.
- b. *Requesting Party's Proposed Revisions:* Within 12 days of receiving the initial proposed search terms, the requesting Party will provide any proposed revisions to the producing Party's search terms.
- c. *Producing Party Provides Information Sufficient to Support Its Objections:* Within 8 days of receipt of the requesting Party's proposed revisions, the producing Party will provide information sufficient to support its objections to specific search terms, which could include, for example, estimates of the incremental number of false positive hits and the incremental number of true positive hits introduced by the disputed search terms, as well as examples of the false positive hits.
- d. *Cooperation:* The producing Party and the requesting Party will work together in good faith to

reasonably narrow the number of documents returned via search term hits and narrow the number of irrelevant documents captured as a result of the search terms. To the extent any disputes remain concerning the sufficiency of the producing Party's information in support of its objections and/or the use of specific search terms after good faith negotiations have occurred, either Party may request the assistance of the Special Master in resolving such disputes.

4. Second Phase Search Term Proposals:

- a. *Requesting Party Proposes an Additional Set of Search Terms:* The Parties agree that Plaintiffs collectively and Defendants collectively may propose additional search terms to a producing Party one time. No later than May 14, 2018 (60 days after the Court-ordered March 15, 2018 deadline for "Rolling Production of Documents, Prioritizing Custodians as Agreed by the Parties or Ordered by the Court" (Dkt. 574)), the requesting Party may propose a set of additional search terms. The requesting Party will explain generally the basis for the additional requested terms, which could include, for example, identifying by Bates number exemplar documents that support the request.
- b. *Producing Party Provides Information Sufficient to Support Its Objections:* No later than 10 days after the requesting Party provides an additional set of proposed search terms, the producing Party will provide information sufficient to support its objections to specific additional search terms, which could include, for example, estimates of the incremental number of false positive hits and the incremental number of true positive hits introduced by the disputed additional search terms, as well as examples of the false positive hits.
- *4 c. *Requesting Party and Producing Party Will Meet and Confer Regarding Requesting Party's Proposed Additional Search Terms:* No later than 15 days after the requesting Party proposes an additional set of search terms, the Parties will meet and confer regarding any disputes or counter-proposals regarding the additional search terms. To the extent any disputes remain concerning the sufficiency of the producing Party's information in support of its objections and/or the use of specific additional search terms after good faith negotiations have occurred, either Party

may request the assistance of the Special Master in resolving such disputes.

d. *Good Cause Inability of a Party to Meet the Deadlines Imposed in this Order*: While it is expected that the Parties shall make their best efforts to comply with the deadlines set forth in this Order, it is conceivable that technical (or other) issues or unanticipated volumes may interfere with a Parties' best efforts to comply. Should a Party anticipate that for good cause it may be unable to meet a deadline set forth in this Order, the Party shall promptly raise the issue with the other Parties, explain the reason for the inability to timely comply, and negotiate a reasonable extension for compliance. If the Parties are unable to immediately agree upon a revised deadline for compliance, they shall promptly raise the issue with the Special Master or the Court for resolution. This provision shall not be construed as blanket permission for a Party to modify or extend the deadlines agreed to by the Parties and set forth in this Order without good cause, but rather, to recognize that when dealing with search and review of large volumes of electronically stored information, there are sometimes legitimate, unanticipated challenges that may interfere with a Party's best efforts to fulfill its obligations and therefore, to afford the Parties reasonable flexibility and mutual accommodation should such eventuality occur.

III. VALIDATION PROTOCOL

A. The review process should incorporate quality-control and quality-assurance procedures to ensure a reasonable production consistent with the requirements of [Federal Rule of Civil Procedure 26\(g\)](#). Once a producing Party reasonably believes that it has produced or identified for production substantially all responsive non-privileged documents, it shall conduct validation according to the sampling protocol described below and in Appendix A. This Validation Protocol shall apply to the review process regardless of whether technology-assisted review ("TAR") or exhaustive manual review ("manual review") was used by the producing Party.

B. The Document Collection ("Collection") is defined as including all documents identified for review for responsiveness and/or privilege following the application of keywords or other culling criteria. This

Validation Protocol assumes that the completeness or adequacy of the Collection has already been established. For purposes of the three putative plaintiff classes' validation requirements under this Validation Protocol, the Collection refers to the combined set of documents of a particular proposed class of plaintiffs, rather than to each individual named representative of a particular class of plaintiffs.

C. The Collection shall be partitioned into the following two or three Subcollections, for manual review or for TAR processes, respectively:

1. Documents identified by the review as responsive to at least one Request for Production, including any privileged documents, but not including family members of responsive documents, unless those family members are deemed to be responsive in their own right ("Subcollection C(1)");

*5 2. Documents coded as non-responsive by a human reviewer, regardless of how the documents were selected for review (e.g., by TAR, manual review, or otherwise) ("Subcollection C(2)");

3. Documents excluded from manual review as the result of a TAR process ("Subcollection C(3)"). If the review process involved only manual review and no TAR, the Collection will not include Subcollection C(3).

D. A sample shall be drawn consisting of the following:

1. 500 documents selected at random from Subcollection C(1) ("Subsample D(1)");

2. 500 documents selected at random from Subcollection C(2), if TAR was used, otherwise 2,500 documents selected at random from Subcollection C(2), if manual review was used ("Subsample D(2)");

3. 2,000 documents selected at random from Subcollection 1(c) if TAR was used ("Sample D(3)"). If TAR was not used, there will be no Subsample D(3).

E. Should a producing Party believe that the sample sizes specified in Paragraph III(D) would be disproportionate or unduly burdensome under the circumstances, that Party shall promptly raise the issue with the requesting Party. To the extent a dispute remains concerning the sample sizes to be used after good faith negotiations have occurred, either Party may request the assistance of the Special Master in resolving such dispute.

F. The sample of 3,000 documents comprised of the documents from Subsamples D(1), D(2), and, if TAR was used, D(3), shall be combined into a single Validation Sample, with no indication of the Subcollection from which the documents were derived or how they were previously coded. The Validation Sample shall be reviewed and coded by a subject matter expert (“SME”) who is knowledgeable about the subject matter of the litigation. This should be an attorney who is familiar with the RFPs and the issues in the case. During the course of the review of the Validation Sample, the SME shall not be provided with any information concerning the Subcollection or Subsample from which any document was derived or the prior coding of any document. The intent of this requirement is to ensure that the review of the Validation Sample is blind; it does not preclude a Party from selecting as SMEs attorneys who may have had prior involvement in the original review process.

G. Once the coding in Paragraph III(F) has been completed, the producing Party shall prepare a table listing each of the 3,000 documents in the Validation Sample. For each document, the table shall include:

1. the Bates number of the document (for documents produced), or a control/identification number (for non-produced documents);
2. the Subsample from which the document came (i.e., D(1), D(2), or, if TAR was used, D(3));
3. the SME's responsiveness coding for the document (i.e., responsive or non-responsive);
4. the SME's privilege coding for the document (i.e., privileged or not privileged). If the document is coded as non-responsive, a privilege determination need not be made. All documents in the Validation Sample coded as privileged shall be included on the producing Party's Privilege Log, as per the requirements set forth in ¶ VI of ESI Protocol (Dkt. 459).
5. for putative class plaintiffs, the named class representative associated with the document.

*6 H. The following items shall be provided to the requesting Party and to the Special Master:

1. the table described in Paragraph III(G);

2. a copy of each responsive, non-privileged document in the Validation Sample that was not previously produced or identified for production to the requesting Party;

3. the statistics and recall estimate detailed in Appendix A to this Order.

I. Once the requesting Party has received and has had an opportunity to review the items described in Paragraph III(H) and Appendix A, the Parties shall meet and confer to determine whether or not the Parties agree that the recall estimate, and the quantity and nature of the responsive documents identified through the sampling process, indicate that the review is substantially complete. If the recall estimate and the samples indicate that Subcollections C(2) and/or C(3) still contain a substantial number of non-marginal, non-duplicative responsive documents as compared to Subcollection C(1), the review and quality assurance process shall continue, and the validation process shall be repeated, as warranted. If the parties are unable to agree on whether the review is substantially complete, or whether the validation process must be repeated, the Special Master shall render a decision, subject to the Parties' rights to petition the Court for review of or relief from any decision or guidance provided by the Special Master.

SO ORDERED.

/s/ Maura R. Grossman

MAURA R. GROSSMAN

SPECIAL MASTER

APPENDIX A

Method of Recall Estimation

An estimate of recall shall be computed to inform the decision-making process described in III(H) of the Validation Protocol; however, the absolute number in its own right shall not be dispositive of whether or not a review is substantially complete. Also of concern is the novelty and materiality (or conversely, the duplicative or marginal nature) of any responsive documents identified in Subsamples D(2) and/or D(3). The estimate of recall shall be derived as described

below, depending on whether or not the review process involved the use of TAR. It should be noted that, when conducted by an SME pursuant to Paragraph III(F) of the Validation Protocol, a recall estimate on the order of 70% to 80% is consistent with, but not the sole indicator of, an adequate (i.e., high-quality) review. A recall estimate somewhat lower than this does not necessarily indicate that a review is inadequate, nor does a recall in this range or higher necessarily indicate that a review is adequate; the final determination also will depend on the quantity and nature of the documents that were missed by the review process.

Recall Estimation Method for a Review Process Involving TAR:

The number of responsive documents found \approx the size of Subcollection C(1) \times the number of responsive docs in Subsample D(1) \div 500.

The number of responsive documents coded incorrectly \approx the size of Subcollection C(2) \times the number of responsive documents in Subsample D(2) \div 500.

The number of responsive documents not reviewed \approx size of Subcollection C(3) \times the number of responsive documents in Subsample D(3) \div 2,000.

Estimated recall \approx the number of responsive documents found \div (the number of responsive documents found + the number of responsive documents coded incorrectly + the number of responsive documents not reviewed).

***7 Recall Estimation Method for a Review Process Involving Manual Review:**

The number of responsive documents found \approx the size of Subcollection C(1) \times the number of responsive documents in Subsample D(1) \div 500.

The number responsive documents coded incorrectly \approx the size of Subcollection C(2) \times the number of responsive documents in Subsample D(2) \div 2,500.

Estimated recall \approx the number of responsive documents found \div (the number of responsive documents found + the number of responsive documents coded incorrectly).

All Citations

Not Reported in Fed. Supp., 2018 WL 1146371

EXHIBIT D

[Submitting Counsel below]

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE: UBER TECHNOLOGIES, INC.
PASSENGER SEXUAL ASSAULT
LITIGATION

MDL No. 3084 CRB

**ORDER GOVERNING THE
PRODUCTION OF ELECTRONICALLY
STORED INFORMATION AND HARD
COPY DOCUMENTS**

This Document Relates to:
ALL ACTIONS

1. PURPOSE

This Order Governing the Production of Electronically Stored Information and Hard Copy Documents (“ESI Order”) will govern discovery of electronically stored information and any hard copy documents in this Litigation as a supplement to the Federal Rules of Civil Procedure and this District’s Guidelines for the Discovery of Electronically Stored Information (“ESI Guidelines”)¹ and Checklist for Rule 26(f) Meet and Confer Regarding Electronically Stored Information (“ESI Checklist”)², and any other applicable orders and rules. Nothing in this Order is intended to expand or limit the obligations of a party or non-party as otherwise required by law. “This Litigation” includes all actions currently in IN RE: UBER TECHNOLOGIES, INC. PASSENGER SEXUAL ASSAULT LITIGATION, or hereafter added or transferred to MDL No. 3084, and all

¹ https://www.cand.uscourts.gov/filelibrary/1117/ESI_Guidelines-12-1-2015.pdf.

² <https://www.casd.uscourts.gov/judges/leshner/docs/Electronically%20Stored%20Information%20Checklist.pdf>

1 actions later remanded to their respective transferor courts.

2 **2. DEFINITIONS**

3 a) “And” and “or” shall be construed conjunctively or disjunctively as necessary to
4 make their use inclusive rather than exclusive, e.g., “and” shall be construed to mean “and/or.”

5 b) “Defendant” or “Defendants” means the named defendants in the above-captioned
6 matter, as well as any later added defendants. “Uber Defendants” means Uber Technologies, Inc.,
7 Rasier, LLC, and Rasier-CA, LLC.

8 c) “Document” is defined to be synonymous in meaning and equal in scope to the
9 usage of this term in Rules 26 and 34 of the Federal Rules of Civil Procedure and shall include
10 Hard-Copy Documents and ESI.

11 d) “Electronically stored information” or “ESI,” as used herein has the same meaning
12 as in Federal Rules of Civil Procedure 26 and 34. For avoidance of doubt, ESI includes
13 Documents existing in electronic form at the time of collection, including but not limited to: email
14 messages (including all active messages and archived or otherwise stored messages), other
15 electronic messaging platforms (such as instant messaging, chat messaging, app-based messaging,
16 Slack messaging, and collaboration tool messaging), calendar items, address book entries,
17 voicemails, recorded phone calls, memoranda, letters, reports, presentations, spreadsheets,
18 databases, charts, handwritten notes, and any storage media.

19 e) “Hard-Copy Document” means Documents existing in paper form at the time of
20 collection.

21 f) “Native Format” means and refers to the format of ESI in which it was generated
22 and/or as used by the producing party in the usual course of its business and in its regularly
23 conducted activities.

24 g) “Metadata” means: (i) structured, i.e., fielded, information embedded in a native
25

1 file which describes, inter alia, the characteristics, origins, usage, and/or validity of the electronic
2 file; (ii) information generated automatically by the operation of a computer or other information
3 technology system when a native file is created, modified, transmitted, deleted, or otherwise
4 manipulated by a user of such system, (iii) information, such as Bates numbers, created during the
5 course of processing documents or ESI for production, and (iv) information collected during the
6 course of collecting documents or ESI, such as the name of the media device, or the custodian or
7 non-custodial data source from which it was collected.

8 h) "Attachment(s)" shall be interpreted broadly and includes, e.g., traditional email
9 attachments and documents embedded in other documents (e.g., Excel files embedded in
10 PowerPoint files) as well as modern attachments, pointers, internal or non-public documents
11 linked, hyperlinked, stubbed or otherwise pointed to within or as part of other ESI (including but
12 not limited to email, messages, comments or posts, or other documents). This definition does not
13 obligate Uber to produce the contemporaneous version of Google Drive documents referenced by
14 URL or hyperlinks if no existing technology makes it feasible to do so.

15 i) "Party" or "Parties" means any person, business organization, or legal entity that is
16 a named plaintiff or defendant in any filed case consolidated under this MDL.

17 j) "Non-Party" or "Non-Parties" means any person, business, organization, or legal
18 entity that is not a named plaintiff or defendant in any filed case consolidated under this MDL.

19 k) "Requesting Party" means the Party requesting the production of Documents.

20 l) "Producing Party" means the Party that may be producing Documents in
21 response to a request by the Requesting Party.

22 m) "Protective Order" means the Protective Order issued by the Court in MDL No.
23 3084, and filed on the docket 3:23-md-03084-CRB at ECF No. 176.

24 n) "Searchable Text" means the native text extracted from an Electronic Document

1 and any Optical Character Recognition text (“OCR text”) generated from a Hard-Copy Document
2 or electronic image.

3 o) “Media” means an object or device, real or virtual, including but not limited to a
4 disc, tape, computer, or other device on which data is or was stored.

5 p) “Optical Character Recognition” or “OCR” means the process of recognizing, and
6 creating a file containing, visible text within an image.

7 q) “Load File(s)” means electronic files provided with a production set of documents
8 and images used to load that production set into a receiving party’s document review platform and
9 correlate its data within that platform.

10 r) “Include” and “Including” shall be construed to mean “include but not be limited
11 to” and “including, but not limited to.”

12 s) “Plaintiff” refers to the named plaintiffs in the above-captioned matter, as well as
13 any later added plaintiffs.

14 t) “Parent-child” shall be construed to mean the association between an attachment
15 and its parent Document in a Document family.

16 u) Any reference to the singular shall also be deemed to refer to the plural, and vice-
17 versa.

18 **3. COOPERATION**

19 The Parties are aware of the importance the Court places on cooperation and commit to
20 cooperate in good faith throughout this Litigation consistent with this Court’s Guidelines for the
21 Discovery of ESI and this Court’s Rules of Professional Conduct.

22 Nothing in this Protocol shall be deemed to constitute a waiver of any objections a
23 Producing Party may have with respect to any discovery demand.

24 Nothing in this Protocol shall be deemed to prevent a Party from seeking the Court’s

1 intervention, pursuant to the Court's Standing Order for discovery disputes, with respect to any
2 issues that may arise regarding the application of this ESI Order to a Document request issued to a
3 Producing Party and/or any responses or objections a Producing Party may have with respect to
4 any such request, if the Parties are unable to resolve any such issues, responses, or objections
5 without the Court's assistance. Likewise, nothing in this ESI Order shall be deemed to prevent any
6 other Party from opposing relief sought from the Court.

7 **4. LIAISON**

8 The Parties will identify Discovery Liaisons to each other for purposes of meeting and
9 conferring on ESI topics. Counsel for Plaintiffs and Uber shall designate their respective ESI
10 liaisons within 30 days of entry of this order, and thereafter the designation may be updated by
11 counsel via email with 10 days' notice.

12 **5. PRESERVATION**

13 The Parties' preservation obligations are currently set forth in PTO No. 2. Nothing
14 contained herein shall be construed to abrogate, minimize, or expand the preservation
15 requirements described in PTO No. 2 or a later entered order of the Court.

16 **6. INADVERTENT PRODUCTION OF PRIVILEGED MATERIAL**

17 The inadvertent production of information subject to protection by the attorney-client
18 privilege, the work-product, joint defense, or other similar doctrine, or by another legal privilege
19 protecting information from discovery, shall be addressed pursuant to Section 11 of the Protective
20 Order and the Privileged Materials Order issued by the Court and filed on the docket 3:23-md-
21 03084 at ECF No. 366.

22 **7. IDENTIFICATION OF CUSTODIAL AND NON-CUSTODIAL DOCUMENTS
23 AND ESI**

24 The Parties will disclose a preliminary list of (a) custodians likely to possess potentially
25

1 relevant information, (b) custodial and non-custodial data sources likely to contain potentially
2 relevant Documents and ESI, and (c) third parties likely to possess potentially relevant
3 information in accordance with Fed. R. Civ. P. 26(f), this District's ESI Guidelines, any applicable
4 Orders entered including PTO No. 5 and participate in Rule 26(f) discussions guided by this
5 District's ESI Checklist.

6 Once discovery requests have been propounded under Fed. R. Civ. P. 34, the parties will
7 further meet and confer regarding those custodians and custodial and non-custodial data sources
8 from which Documents and ESI will be collected for review for potential production in this
9 litigation.

10 The custodian and data source exchanges will include brief explanations of the rationale
11 for their selections; for example, for custodians, their current job titles, dates of employment, and
12 descriptions of their work, and for data sources, location information and description.

13 As stated in PTO No. 2, sources of ESI may include, without limitation, for both corporate
14 and personal accounts: (1) email systems; (2) mobile device data; (3) text and messaging
15 applications (e.g., iMessage, WhatsApp, Facebook Messenger, SnapChat, WeChat, Signal, Wickr,
16 Telegram, uChat, and HipChat); (4) Workplace collaboration tools and chat applications (i.e.,
17 Slack and Microsoft Teams); (5) social media accounts; (6) unstructured data (e.g., documents
18 created by commonly used Microsoft Office programs and Google programs); (7) structured data
19 (e.g., information stored in structured databases like Salesforce and Basecamp); (8) wearable
20 devices (e.g., data from watches or tags); (9) backup media (e.g., data from tapes, discs, or cloud
21 accounts); (10) external storage media (e.g., portable hard drives or flash drives); (11) voicemail
22 systems; and (12) video surveillance systems.

1 The Parties agree that if the Producing Party determines a source is not “reasonably
2 accessible” pursuant to Fed. R. Civ. P. 26(b) during the search and collection process it will
3 provide sufficient information regarding the accessibility of the source to enable the Parties to
4 confer in good faith within seven (7) days of this determination about whether such source or
5 Document will be produced or methods by which the information can be produced. If the Parties
6 disagree as to the accessibility of the source after a good faith meet and confer, the Party seeking
7 discovery from the source may submit the issue to the Court or its designee in accordance with the
8 Court’s procedures. The Parties agree to take any unresolved disputes on same promptly to the
9 Court or its designee.

10 **8. SEARCH QUERIES AND METHODOLOGIES**

11 Pursuant to Fed. R. Civ. P. 26(f), and the ESI Guidelines, the Parties will meet and confer,
12 as appropriate, to discuss certain aspects of the discovery process, for example, the number of
13 custodians, the identity of those custodians, keywords to be used as part of culling files, collection
14 from non-custodial files, file types, date ranges, validation procedures and random sampling,
15 technology assisted review (“TAR”) or other appropriate advanced technology. This process will
16 be iterative. For the avoidance of doubt, Plaintiffs will disclose to Defendants their processes for
17 preservation and collection of documents, including the sources from which such documents will
18 be collected, and the parameters for search and review of documents. Plaintiffs will meet and
19 confer with Defendants about these issues.

20 a) Use of TAR by the Uber Defendants.

21 1. Overview.

22 As part of document review, the Uber Defendants intend to use TAR methodology known
23 as TAR 2.0, which utilizes continuous active learning to classify and prioritize documents for
24 attorneys to review. Specifically, the Uber Defendants intend to use Relativity Active Learning

1 (“RAL”) on a Relativity Server 12.1.537.3 platform provided by their vendor Lighthouse.
2 Commonly, a TAR 2.0 methodology begins with ingesting document population into the TAR 2.0
3 software where the algorithm learns to distinguish relevant from non-relevant documents through
4 attorney review of documents. The TAR 2.0 algorithm prioritizes the documents in the review
5 queue from most to least likely to be responsive. Attorney reviewers then review documents the
6 TAR 2.0 model has prioritized as most likely to be responsive in descending order from most to
7 least likely to be responsive. As the review continues and reviewers code documents, the TAR 2.0
8 model continues to learn and prioritize likely responsive documents until a stopping point is
9 reached and a validation is conducted.

10 2. TAR and Search Terms

11 TAR processing may be ‘stacked’ with the application of search terms. If search terms are
12 to be applied, the parties shall meet and confer regarding the proposed search terms. The search
13 terms may be agreed by the parties, or certain search terms may be ordered by the Court if the
14 parties are unable to reach an agreement.

15 3. Stopping Criteria

- 16 i. Once two or more consecutive review batches sequentially populated by the
17 highest-ranking uncoded documents remaining in the project in order from
18 highest to lowest scores and containing a total of at least 1,000 documents
19 are found to contain 10% or fewer documents marked responsive,
20 Defendants will pause the review and turn to validation. Defendants may
21 extend the review past this point if they believe sufficient thoroughness has
22 not been achieved. Defendants do not intend for the relevant batches to
23 include index health documents.
- 24 ii. The responsiveness rate will be calculated only over documents drawn

1 directly into the prioritized review queue due to their own predicted
2 relevance score (“primary documents”). It will not include family members
3 of these primary documents, even if said family members are reviewed at
4 the same time as said primary documents.

5 4. Validation

- 6 i. A Validation Sample consisting of three strata will be drawn from the entire
7 TAR population. 500 documents will be drawn, at random, from documents
8 coded responsive prior to validation; 500 documents will be drawn, at
9 random, from documents coded nonresponsive prior to validation; and
10 2,000 documents will be drawn, at random, from documents not coded prior
11 to validation (i.e., the null set). This will ensure an estimate of Prevalence
12 with a margin of error no larger than 2.1% at 95% confidence. As for all
13 statistical estimates, the precise margin of error can only be known after the
14 sample is reviewed.
- 15 ii. For the purpose of determining which sampling stratum a document falls in,
16 only the direct coding status of that document will be considered, not any
17 coding it may inherit due membership in a family. For instance, a
18 document coded non-responsive will fall in the non-responsive stratum,
19 even if it is a family member of a document coded as responsive.
- 20 iii. The 3,000 documents will be reviewed *de novo* for responsiveness by
21 Defendants, interleaved in random order, with no indication to the reviewer
22 of their prior coding status.
- 23 iv. Recall and Prevalence will be calculated using the following quantities:
- 24 1. the number of documents in the TAR population that were coded
- 25

responsive prior to validation;

2. the number of documents sampled from (1) that are coded

responsive in the *de novo* review;

3. the number of documents in the TAR population that were coded

nonresponsive prior to validation;

4. the number of documents sampled from (3) that are coded

responsive in the *de novo* review;

5. the number of responsive documents in the TAR population that

were not coded prior to validation; and,

6. the number of documents from (5) that are coded responsive in the

de novo review.

v. Recall = $[(1) \div 500 \times (2)] \div [(1) \div 500 \times (2) + (3) \div 500 \times (4) + (5) \div 2000 \times (6)]$

vi. Prevalence = $[(1) \div 500 \times (2) + (3) \div 500 \times (4) + (5) \div 2000 \times (6)] \div [(1) + (3) + (5)]$

vii. The Uber Defendants will disclose the calculated Recall and Prevalence and the input quantities used to calculate Recall and Prevalence.

viii. Plaintiffs' Designated Reviewers shall have the opportunity to review all non-privileged documents in the Validation Sample, without any knowledge of how any individual documents were coded by the Uber Defendants, in order to perform a blind comparison of the provided Recall and Prevalence estimates.

ix. This review may take place (a) at such location or locations mutually agreed by the Parties, on a date and time to be agreed to by the Parties, or (b) via a secure web-based viewer on a date and time to be agreed to by the Parties.

Any documents coded Not Responsive by the Uber Defendants to which Plaintiffs' Designated Reviewers are provided access as part of this review are provided for the limited and sole purpose of raising and resolving disagreements, if any, regarding the coding calls made by the Uber Defendants. Any such disagreements shall be recorded on a TAR Protocol Classification Dispute Log (the "Log"), which shall be in a form agreed upon by the Parties. Once Plaintiffs' Designated Reviewers complete their review of the Validation Sample, the Parties shall meet and confer to resolve any differences in coding designation. If resolution cannot be reached, the issue shall be submitted to the Court for resolution.

- x. If the recall estimate derived from the validation sample is below 80%, or if the documents designated responsive in the part of the sample drawn from the null set indicate that the TAR tool's model of Responsiveness was too limited, e.g., if the responsive documents in the Validation Sample included novel or significant documents, then Plaintiffs and Defendants will discuss remedial action to locate an adequate proportion of the remaining relevant documents in the null set, including but not limited to: continuing reviewing from the prioritized queue; and training alternative predictive models focused on the relevant documents found in the elusion test. After Defendants disclose these metrics, the parties may meet and confer to discuss questions and issues relating to the TAR process. If the validation protocol leads to an estimate lower than 80%, or even lower than 70%, this lower recall estimate does not necessarily indicate that a review is inadequate. Nor does a recall in the range of 70% to 80% necessarily

1 indicate that a review is adequate; the final determination of the quality of
2 the review will depend on the quantity and nature of the documents that
3 were missed by the review process.

4 b) Disclosures

5 1. Once the TAR process is complete in addition to above, Defendants intend
6 to disclose various metrics regarding the TAR 2.0 methodology utilized, including the following:
7 (i) the total TAR population, (ii) the total population produced, (iii) the total population not
8 produced, (iv) the total population not reviewed, (v) the size of the validation set used to verify the
9 TAR 2.0 results, and (vi) a summary of the validation process. The summary of the validation
10 process will include the following figures from the Validation Sample: (a) the number of
11 documents within the sample that were previously coded relevant; (b) the number of documents
12 within the sample that were previously coded not relevant; (c) the number of unreviewed
13 documents within the sample. The summary of the validation process will also include the
14 number of actual responsive documents identified in (a), (b), and (c) during the validation process.
15 Defendants will also produce all non-privileged responsive documents in the Validation Sample.
16 After Defendants disclose these metrics, the parties may meet and confer to discuss questions and
17 issues relating to the TAR process.

18 c) Key Word Search.

19 1. If the Producing Party is identifying responsive ESI, which is not already
20 known to be responsive, using search terms, the Parties will meet and confer about search terms
21 in English and any other languages used in the Producing Party's documents. Before
22 implementing search terms, the Producing Party will disclose information and meet and confer
23 within seven days of the ESI Protocol being entered, or on a date agreed upon by the parties,
24 regarding the search platform to be used, a list of search terms in the exact form that they will be
25

1 applied (i.e., as adapted to the operators and syntax of the search platform), significant or
2 common misspellings of the listed search terms in the collection to be searched, including any
3 search term variants identifiable through a Relativity dictionary search with the fuzziness level
4 set to 3, any date filters, or other culling methods. At the same time the Producing Party discloses
5 the search terms, unless the Receiving Party agrees to waive or delay disclosure, the Producing
6 Party shall disclose the unique hits, hits with families, and the total number of documents hit.
7 Within seven days after the Producing Party discloses its list of search terms and related
8 information, the Receiving Party may propose additional or different search terms or culling
9 parameters and may propose a limited number of custodians for whom, across their email and
10 other messages, the Receiving Party requests that no search term pre-culling be used prior to
11 TAR 2.0. At the same time the Receiving Party discloses its proposals, it may request that the
12 Producing Party provide hit reports, and the Producing Party must promptly respond with that
13 information but may also provide other information. The parties must confer within 14 days after
14 the Receiving Party's proposal to resolve any disputes about the search terms. The parties may
15 agree to extend this deadline, but no extension may be more than 14 days without leave of the
16 Court. Use of search terms shall be validated post-review using comparable methodology and
17 metrics to those set out in Disclosures (a) and (c) above.

18 2. Nothing in this ESI Order may be construed or interpreted as precluding a
19 Producing Party from performing a review to determine if documents captured by search terms
20 are in fact responsive to the Requesting Party's discovery requests. Similarly, nothing in this ESI
21 Order may be construed or interpreted as precluding a Producing Party from performing, by any
22 means, a privilege review of documents determined to be responsive. Further, nothing in this ESI
23 Order requires the production of documents captured by any search term that are not relevant and
24 responsive to the Requesting Party's request, that are privileged, or that are otherwise protected

1 from disclosure.

2 **9. END-TO-END VALIDATION OF DEFENDANTS' SEARCH METHODOLOGY**
3 **AND RESULTS**

4 The Parties shall participate in an iterative and cooperative approach in which the Parties
5 will meet and confer regarding reasonable and appropriate validation procedures and random
6 sampling of Defendants' Documents (both of relevant and non-relevant sets and of the entire
7 collection against which search terms were run or TAR or other identification or classification
8 methodology was used), in order to establish that an appropriate level of end-to-end recall (the
9 percentage of responsive Documents in the initial collection before any search terms or TAR or
10 manual review was applied which were classified as responsive after Defendants search, TAR and
11 review processes) has been achieved and ensure that the Defendants' search, classification and
12 review methodology was effective and that a reasonable percentage of responsive ESI was
13 identified as responsively being omitted.

14 **10. UNSEARCHABLE DOCUMENTS**

15 Documents which are reasonably believed to be responsive and for which text-based
16 search technologies are fundamentally ineffective, such as images, video, certain spreadsheets,
17 certain hard copy documents, certain documents from noncustodial sources, or certain foreign
18 language documents where the Parties do not have suitable search terms in such language, must be
19 reviewed without culling by search terms, predictive coding, or other technologies that rely
20 primarily on text within the document. Prior to the production of such unsearchable items, the
21 Producing Party may conduct a page-by-page review for responsiveness, confidentiality, privilege,
22 and other protections.

23 **11. SYSTEM FILES**

24 Each Party will use its best efforts to filter out common system files and application
25

1 executable files using the national software reference library (“NSRL”) NIST hash set list. The
2 Parties shall meet and confer on methods for excluding any other non-substantive files and folders
3 that are reasonably identified as system files and not likely to contain user-created files or content.

4 **12. DEDUPLICATION**

5 Each Party shall make reasonable efforts to globally de-duplicate exact duplicate
6 Documents within the Party’s ESI data set across all custodians at the family level. Documents
7 should be de-duplicated at the family level using MD5 hash values, or SHA-1 hash values, or the
8 SourceHash value generated by Google for Google Drive documents, or comparable industry
9 standard hash algorithm disclosed by such Party. “Exact duplicate” shall mean bit-for-bit identity
10 of the Document content with exact Hash Value matches. Parties shall disclose the methodology,
11 e.g., industry standard program (including any variable parameters), being used to calculate the
12 hash values for individual emails and email families. Any such methodology must ensure that an
13 email that includes content in the “BCC” or other blind copy field shall not be treated as a
14 duplicate of any otherwise identical email that does not include content in the “BCC” or other
15 blind copy field. Emails shall be deduplicated at the family level and standalone documents shall
16 not be deduplicated against attachments. The names of all custodians and non-custodial sources
17 who were in possession of a document prior to deduplication will be populated in the “ALL
18 CUSTODIAN” metadata field, separated by semi-colons, in addition to a separate field of data
19 identifying the custodian whose Document is produced; such de-duplicated Documents shall be
20 deemed produced from the custodial files of each such identified custodian for all purposes in this
21 litigation, including for use at deposition and trial. The original file paths of a Document prior to
22 deduplication will be populated in the “ALL FILE PATHS” metadata field, separated by
23 semicolons, in the order corresponding to the order of names in ALL CUSTODIANS. Hard-Copy
24 Documents shall not be eliminated as duplicates of ESI.

1 **13. NO EMAIL THREADING**

2 No email may be withheld from production because it is included in whole or in part in a
3 more inclusive email, although Parties may use email threading for their own internal review and
4 other internal processes.

5 **14. SOURCE CODE**

6 The Parties will meet and confer to address the production and/or inspection of source code
7 and enter into a separate order governing the same.

8 **15. PRODUCTION FORMATS**

9 The Parties agree to produce documents and data in the formats described in Appendix 1 to
10 this ESI Order. If particular Documents or categories of Documents identified in response to
11 document requests warrant a different format, the Parties will cooperate to arrange for the
12 mutually acceptable production of such documents. The Parties further agree not to degrade the
13 searchability of Documents as part of the Document production process. Google file types, e.g.,
14 Google docs, sheets and slides, shall be produced as their Microsoft equivalents, i.e., Google docs
15 files shall be produced as Microsoft Word files, and Google sheets shall be produced as Microsoft
16 Excel Files, etc.

17 **16. PHASING**

18 Once the Parties begin propounding discovery requests pursuant to Fed. R. Civ. P. 34,
19 the Parties agree to meet and confer regarding appropriate phasing for the production of ESI to the
20 degree efficient and feasible.

21 **17. CLOUD STORED DOCUMENTS**

22 a. Metadata Preserved.

23 Uber shall preserve the metadata relationship between email messages with links to files
24 on Google Drive to the extent feasible with existing technology. Uber shall preserve and produce

1 (including, if necessary, as custom fields) all metadata collected with respect to all cloud-stored
2 documents. That includes, but is not limited to, all metadata output by Google Vault when
3 exporting a matter. Thus, the metadata exported from Google Vault pertaining to each document
4 shall be preserved and produced as metadata for the same document within the load file of any
5 production containing any such document.

6 b. Hyperlinked/URL-Referenced Documents.

7 Producing party shall make all reasonable efforts to maintain and preserve the relationship
8 between any message or email and any cloud-hosted document hyperlinked or referenced within
9 the message or email. Thus, for instance, where a collected email links to or references by URL a
10 document on Google Drive (or housed within Google vault,) the metadata for that message or
11 email shall include the URLs and Google Document ID of all hyperlinked documents.

12 c. Contemporaneous Versions of Hyperlinked/URL-Referenced Documents.

13 Uber shall produce, to the extent feasible on an automated, scalable basis with existing
14 technology, the contemporaneous document version, i.e., the document version likely present at
15 the time an email or message was sent, of Google Drive documents referenced by URL or
16 hyperlinks therein. For hyperlinked Google Workspace data archived using Google Vault, Uber is
17 not required to produce the contemporaneous document version at the time the email or message
18 was sent, as this is not possible through an automated process with existing technology. However,
19 Plaintiffs may identify up to 200 hyperlinks for which they seek the contemporaneous referenced
20 document even though the email or message has been archived with Google Vault. Uber shall
21 identify and produce the likely contemporaneous versions that Plaintiffs have requested. The
22 scope of this production does not exempt Uber from any obligation that it preserve historic
23 versions or revision history of any document referenced by URL or hyperlink.

1 **18. PLAINTIFFS' PRODUCTION OF ESI AND CASE SPECIFIC DOCUMENTS**

2 This provision does not apply to Plaintiff's Fact Sheet (PFS) and/or documents produced
3 with the PFS as they are the subject of a separate Order. The parties shall further agree to confer
4 concerning the production format (e.g., pdfs) and associated matters (e.g., hosting platform to the
5 extent not already negotiated) for Plaintiff specific documents. Any Plaintiffs who are selected to
6 proceed forward towards a trial date will meet and confer with Defendants about the technical
7 aspects of these Plaintiffs' production of non-privileged documents as appropriate during the
8 course of those Plaintiffs' specific Rule 26 formal discovery. This provision shall not limit any
9 Plaintiff's obligation to produce discovery that the Court or Federal Rules of Civil Procedure may
10 require before being selected for trial. Plaintiffs will meet and confer with Defendants about
11 these issues after such formal discovery is propounded. No other provision of the ESI Order will
12 apply to Plaintiffs but for the terms set forth herein. Nothing herein shall limit Defendants' rights
13 to seek discovery from Plaintiffs.

14 **19. MISCELLANEOUS PROVISIONS**

15 a) Translations Of Produced Materials. The Producing Party has no obligation to
16 create a translation of the Documents or any portion thereof. For any foreign-language documents
17 responsive to document requests that a Party reasonably knows as the result of a reasonable
18 investigation have been translated into the English language using human translators or through
19 machine translation in the ordinary course of business or for its own purposes, except to the extent
20 such translation is protected by attorney-client or work-product privileges, the Producing Party
21 shall produce the translation of the original document with the original. The Parties will meet and
22 confer as necessary concerning procedures for using translations at depositions and at trial. In the
23 event the Parties cannot reach agreement, the matter may be submitted to the Court for
24 determination.

b) Non-Party Documents. A Party that issues a Non-Party subpoena (“Issuing Party”) shall include a copy of this Order with the subpoena and state that (1) the subpoenaed Non-Party should produce Documents in response to the subpoena to all Parties; and (2) the Parties to this Litigation have requested that Non-Parties produce Documents in accordance with the specifications set forth herein. If a subpoenaed Non-Party produces Documents to the Issuing Party but does not produce those Documents to other Parties, the Issuing Party shall produce such Documents to those other Parties within 14 days of receiving the Documents, except where the Documents are to be used in a deposition, in which case the Issuing Party shall produce such Documents to all other Parties no later than three (3) days prior to the deposition, or as soon as reasonably practicable if such production occurs thereafter. Nothing in this Order is intended or may be interpreted to narrow, expand, or otherwise affect the rights of the Parties or Third Parties to object to a subpoena. If a Non-Party production is not Bates-stamped, the Parties will meet and confer to agree upon a format for designating the documents with a unique Bates Number prefix.

c) Lost, Destroyed, or Irretrievable ESI. If a Producing Party learns that responsive ESI that once existed was lost, destroyed, or is no longer retrievable as a result of acts or circumstances not occurring in the ordinary course of business, the Producing Party shall explain where and when the responsive ESI was last retrievable in its original format and to disclose the circumstances surrounding the change in status of that responsive ESI, whether that information is available from other sources, whether any backup or copy of such original responsive ESI exists.

d) Re-productions. Notwithstanding any provisions to the contrary, re-production of discrete sets of documents from another litigation, arbitration, government inquiry, or other matter may be re-produced in the same manner and form as originally produced in the other matter, provided however that a party may, upon reasonable request and for good cause shown, re-produce documents in a different format. This provision does not waive the right of a party to

1 object to any requests for reproduction of production files from another litigation, arbitration,
2 government inquiry, or other matter.

3 e) Protective Order. Documents produced by the Parties are subject to the terms of the
4 Protective Order [Dkt. 176] entered in this Litigation.

5 f) Production Log. With each production of documents, the producing party shall
6 produce a log that contains the following information: (i) Production volume number; (ii) Date of
7 the production; (iii) Bates range for the production; (iv) Sources of information from which the
8 documents are being produced (e.g., names of custodians or noncustodial sources); (v) Other
9 relevant information about the production (i.e., whether the production is an overlay file for a
10 previous production). The log should be supplemented with each production such that each
11 version contains all previous productions on the log along with the new production information.

12 g) Modification. This ESI Order may be modified by a Stipulated Order of the Parties
13 or by the Court for good cause shown.

14 h) Good Faith. The Parties will act in good faith as required by law and use these
15 procedures to identify and reduce the potential for disputes.

16 i) Continuing Obligations. The parties will continue to meet and confer regarding
17 discovery issues as reasonably necessary and appropriate. This Order does not address or resolve
18 any objections to the Parties' respective discovery requests.

19 j) Reservation of Rights. Nothing in this ESI Order may be construed or interpreted to
20 waive any objections to the production, discoverability, admissibility, or confidentiality of
21 documents and ESI, or independently move for an appropriate protective order pursuant to the
22 Federal Rules of Civil Procedure. Nothing in this Order shall be deemed to be a waiver of any
23 Party's right to reasonably seek agreement from the other Parties, or a Court ruling, to modify
24 proposed or previously agreed to search terms, techniques, tools, or any other provision set forth

1 in this Order for good cause.

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3 IT IS ORDERED that the forgoing Order is approved.

4 DATED: May 3, 2024


Hon. Lisa J. Cisneros

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APPENDIX 1: PRODUCTION FORMAT

1. Production Components. Except as otherwise provided below, ESI must be produced in accordance with the following specifications:
 - a) an ASCII delimited data file (.DAT) using standard delimiters;
 - b) an image load file (.OPT) that can be loaded into commercially acceptable production software (e.g. Concordance);
 - c) single page black-and-white TIFF or color JPEG images, or native files with single page placeholder TIFF images, depending on the applicable production format for each type of file;
 - d) and document level .TXT files for all documents containing extracted full text or OCR text.
 - e) Family relationships (be that email, messaging applications, or otherwise) will be maintained in production. Attachments (as previously defined herein) should be consecutively produced with their parent (in the case of hyperlinked attachments, only one copy of the attachment will be produced with all agreed-upon metadata referencing the attachment to any linked emails). Objects, documents or files embedded in documents, such as OLE embedded objects (embedded MS Office files, etc.), or images, etc., embedded in RTF files, shall be extracted as separate files and treated as attachments to the parent document. Chats from programs like Slack and HipChat should be produced in families by channel or private message.
 - f) If a particular document warrants a different production format, the Parties will cooperate in good faith to arrange for a mutually acceptable production format.
2. Production Media and Access Controls. Productions must be encrypted and produced through secure electronic means, such as secure file sharing methods (e.g. FTP), or on CD, DVD,

1 flash drive or external hard drive (“Production Media”). Nothing in this ESI Order will preclude or
2 impair any and all protections provided the Parties by any Protective Order(s) agreed and entered
3 into by the Parties. Parties will use best efforts to avoid the unnecessary copying or transmittal of
4 produced documents. If questions arise, the Parties will meet and confer to ensure security
5 concerns are addressed prior to the exchange of any documents.

6 3. Data Load Files/Image Load Files. Each TIFF in a production must be referenced in the
7 corresponding image load file. The total number of documents referenced in a production’s data
8 load file should match the total number of designated document breaks in the image load file(s) in
9 the production. The total number of pages referenced in a production’s image load file should
10 match the total number of TIFF files in the production. The total number of documents in a
11 production should match the total number of records in the data load file. Load files must not vary
12 in format or structure within a production, or from one production to another except by agreement
13 of the Parties.

14 4. Metadata Fields. Defendants shall use methods of collection and processing that preserve
15 the integrity of document metadata, and of parent-child and family group relationships such as the
16 association between attachments and parent documents, or between embedded documents and
17 their parents, or between documents, including, but not limited to, emails (e.g., Outlook, Gmail) or
18 messaging or communication posts (e.g., Slack, Teams, Google Hangouts, Google Chat), with
19 document stubs or links or pointers to internal or non-public (e.g., Google Workspace, Zendesk)
20 documents and those stubbed or internal or non-public documents so linked Documents containing
21 hidden URLs, e.g., an email containing a link where the text of the link is not the URL (for
22 example, a link with the displayed text “Please review this article” where the URL of the link, e.g.,
23 <https://somesite.com/somearticle.html/>” is not itself the display text of the link) should be
24 processed such that all hidden URLs are included in the extracted text.

1 The metadata fields detailed in Appendix 2 should be produced for each Document to the
2 extent that such information is available or, in the case of metadata created during processing such
3 as Bates numbers created at the time of collection and processing, except that if a field contains
4 privileged information, that privileged information may be redacted and noted in a corresponding
5 privilege log.

6 5. TIFFs. Unless excepted below, single page, black and white, Group IV TIFFs should be
7 provided, at least 300 dots per inch (dpi) for all documents. If the receiving party is not satisfied
8 with the quality of TIFFs for particular images, it may request the producing party to produce
9 those images in native format. In addition, the Parties shall take reasonable efforts to process word
10 processing documents (e.g., MS Word) with track changes and/or comments unhidden on the
11 TIFF image.

12 6. Bates Numbering. All produced ESI must be assigned a unique Bates number that is
13 sequential within a given document and across the production sets, along with a confidentiality
14 designation. The producing party will brand all TIFF images in the lower right-hand corner with
15 its corresponding Bates number, using a consistent font type and size. The Bates number must not
16 obscure any part of the underlying image. If the placement in the lower right-hand corner will
17 result in obscuring the underlying image, the Bates number should be placed as near to that
18 position as possible while preserving the underlying image. Original document orientation should
19 be maintained (i.e., portrait to portrait and landscape to landscape). Bates numbering should be a
20 consistent length across the production, contain no special characters, and be numerically
21 sequential within a given document. The Bates Numbers in the load file must match the
22 corresponding documents' beginning Bates numbers in the data load file. If a Bates number or set
23 of Bates numbers is skipped, the skipped number or set of numbers should be noted with a
24 placeholder. Attachments to documents will be assigned Bates numbers that directly follow the

1 Bates numbers on the documents to which they were attached. In addition, wherever possible,
2 each image will have its assigned Bates number electronically “burned” onto the image.

3 7. Color. Any ESI that is not an email communication and contains color will be processed as
4 a JPEG file at 300 DPI. Where the receiving party reasonably suspects that particular email
5 communications contain color that is necessary to determine the meaning of the communication,
6 the receiving party may make reasonable and proportionate requests for particular email
7 communications to be produced in color. The Parties agree to meet and confer regarding such
8 requests as appropriate. A Party making such a request shall make the request by individual Bates
9 number(s) and shall limit requests made pursuant to this paragraph to a reasonable number of
10 documents.

11 8. Text Files. A single text file shall be provided for each document. The text file name shall
12 be the same as the Bates number of the first page of the document with the document extension
13 “.txt” suffixed. Files names shall not have any special characters or embedded spaces. Electronic
14 text must be extracted directly from the native electronic file unless the document requires
15 redaction and is not a spreadsheet, is an image file, or is any other native electronic file that does
16 not contain text to extract (*e.g.*, non-searchable PDFs). In these instances, and in the case of
17 imaged hard-copy documents, a text file shall be created using OCR and shall be produced in lieu
18 of extracted text. Text shall be provided in UTF-8 format. Extracted text shall be generated with
19 commercially acceptable technology set to include all comments, revisions, tracked changes,
20 speaker’s notes and text from documents with comments or tracked changes, and hidden and very
21 hidden worksheets, slides, columns and rows as well as all URLs. When possible, the text of
22 native files should be extracted directly from the native file. Parties will use their best efforts to
23 OCR foreign language documents using the appropriate setting for those languages, although that
24 may require additional process. Text files will not contain the redacted portions of the documents.

1 A commercially acceptable technology for optical character recognition (“OCR”) should be used
2 with the highest quality setting during processing for all scanned, hard copy documents, and for
3 documents with redactions other than Excel files and other spreadsheets which shall be redacted in
4 native format. Text extracted from emails should include the following header information where
5 available: (1) the individuals to whom the communication was directed (“To”), (2) the author of
6 the email communication (“From”), (3) who was copied and blind copied on such email (“CC”
7 and “BCC”), (4) the subject line of the email (“RE” or “Subject”), and (5) the date and time of the
8 email. Text extracted from emails and other documents should also be generated with
9 commercially acceptable technology set to include the text of any URLs or links, e.g., if an email
10 contains a link like “Please review these rules” where “these rules” is a URL to a destination such
11 as “[https://www.cand.uscourts.gov/notices/newnotice-proposed-modifications-to-civil-local-](https://www.cand.uscourts.gov/notices/newnotice-proposed-modifications-to-civil-local-rules/)
12 [rules/](https://www.cand.uscourts.gov/notices/newnotice-proposed-modifications-to-civil-local-rules/)”, then the extracted text must include the URL as well as the linked text “these rules.”

13 9. Native files. All spreadsheet files (e.g., Microsoft Excel or Google Sheets), as well audio
14 and video files, shall be produced as native files with TIFF placeholder images. Spreadsheet files
15 requiring redaction, including Microsoft Excel files, will be redacted within the native file, and the
16 redacted native file will be produced as provided herein. Moreover, to the extent a spreadsheet file
17 is a Google Sheet, this will be provided in a Microsoft Excel format. To the extent that they are
18 produced in this Litigation, audio, video, and multi-media files will be produced in native format.
19 The Parties will meet and confer on the production of other file types, such as proprietary files,
20 etc. Native files will be produced with a link in the NATIVEFILEPATH field, along with
21 extracted text (where extracted text is available) and applicable metadata fields set forth in
22 Appendix 2. A Bates numbered TIFF placeholder indicating that the document was provided in
23 native format must accompany every native file. Where redaction makes production of native-
24 format files other than spreadsheets or presentations infeasible, the Parties will confer to determine

1 a reasonably usable form for the production, but spreadsheets shall presumptively be redacted in
2 native, and presentations presumptively redacted in image form, in these cases without the need
3 for further conferring.

4 10. Production Format for Hard Copy Documents. In scanning paper documents, documents
5 are to be produced as they are kept. For documents found in folders or other containers with
6 labels, tabs, or other identifying information, such labels and tabs shall be scanned where
7 practicable. Pages with Post-It notes shall be scanned both with and without the Post-it, with the
8 image of the page with the Post-it preceding the image of the page without the Post-It. Hard copy
9 documents will be made text searchable. The producing party will use best efforts to unitize
10 documents (*i.e.*, distinct documents should not be merged into a single record, and a single
11 document should not be split into multiple records), and maintain document relationships, *i.e.*,
12 attachment status. Original document orientation (*i.e.*, portrait v. landscape) should be maintained.

13 11. Confidentiality Designation. All images will be stamped with the appropriate
14 confidentiality designations in accordance with the Protective Order entered in this Litigation.
15 Each document produced in native format will have its confidentiality designation identified in the
16 filename of the native file and indicated on its corresponding TIFF placeholder.

17 12. Databases and Other Data Sources. The Parties shall meet and confer regarding the
18 production and format and scope of relevant structured data or aggregated or threaded data source
19 or otherwise maintained by an application (e.g., Microsoft Teams, Slack, Microsoft Access,
20 SharePoint, Oracle, Salesforce, ACT!, or any other messaging or proprietary databases or services)
21 in order to ensure that any information produced is reasonably usable by the Receiving Party and
22 that its production does not impose an undue burden on the Producing Party. The Parties will
23 cooperate in the exchange of sufficient information concerning such databases to facilitate
24 discussions on the production of responsive information, including available data fields/objects

1 and schema. To the extent a Party is constrained from producing responsive ESI because of a
2 third-party license or because software necessary to view the ESI is hardware dependent, the
3 Parties shall meet and confer to minimize any expense or burden associated with the production of
4 such documents in an acceptable format, including issues as may arise with respect to obtaining
5 access to any such software and operating manuals.

6 13. Embedded Objects. OLE embedded objects (embedded MS Office files, etc.) shall be
7 extracted as separate files and treated as attachments to the parent document. Images embedded in
8 emails shall not be produced separately. Parties agree non-substantive embedded objects,
9 including, but not limited to, logos, icons, emoticons, and footers need not be produced as separate
10 documents by a Producing Party (i.e., such embedded objects will be produced within the
11 document itself, rather than as separate documents). Embedded files, except for images and non-
12 substantive embedded objects (including but not limited to, logos, icons, emoticons), are to be
13 produced as family groups. Embedded files should be assigned Bates numbers that directly follow
14 the Bates numbers on the documents within which they are embedded.

15 14. Production of Family Groups and Relationships. If any member of a family group is
16 produced, all members of that group must also be produced or else logged as privileged, and no
17 such member shall be withheld from production as a duplicate.

18 15. Dynamic Fields. Documents with dynamic fields for file names, dates, and times will be
19 imaged to show the field code (e.g., “[FILENAME]”) where possible, rather than the values for
20 such fields existing at the time the file is processed.

21 16. Time Zone. All provided metadata pertaining to dates and times will be standardized to
22 UTC.

23 17. Redactions. Other than as permitted by this Order or the Protective Order entered in this
24 Action, no redactions for relevance may be made within a produced document or ESI item. The

1 Parties agree to meet and confer on a case-by-case basis if a Party believes there is a good faith
2 basis to permit limited redaction by agreement of the Parties of highly sensitive, non-relevant
3 information within a Document that contains other relevant information. Any redactions shall be
4 clearly indicated on the face of the document, with each redacted portion of the document stating
5 that it has been redacted and the type of the redaction, and a metadata field shall indicate that the
6 document contains redactions and the type of the redaction (e.g., “Privacy” or “Privilege”). Where
7 a responsive document contains both redacted and non-redacted content, the Parties shall produce
8 the non-redacted portions of the document and the OCR text corresponding to the non-redacted
9 portions.

10 18. Spreadsheets. Spreadsheet files requiring redaction, including without limitation Microsoft
11 Excel files, will be redacted and produced natively.

12 19. Other Documents. All images of redacted native files shall be processed to show and
13 reveal all comments, revision marks, speaker notes, or other user-entered data which are visible in
14 any view of the exported document. Where possible, any occurrences of date/time auto-field
15 items, including in headers and footers, will be removed and replaced with the term AUTODATE
16 to prevent the current date from being printed. Email header information (e.g. date, subject line,
17 etc.) should not be redacted unless it is independently privileged. The production of a document in
18 a redacted form does not affect the Parties’ obligation to timely assert and substantiate the
19 assertion of privilege over the content in a privilege log. The Parties shall honor reasonable
20 requests for the production of particular redacted documents in other formats where the image is
21 not reasonably usable.

22 20. Color. Redacted versions of Documents that would have been produced in color in their
23 un-redacted form shall be produced in color as detailed herein.

24 21. Exception Files. The Parties will use reasonable efforts and standard industry practices to
25

1 address Documents that present imaging or form production problems (including encrypted and/or
2 protected files identified during the processing of ESI) (“Exception Files”). The Parties will meet
3 and confer regarding procedures that will be used to identify, access, and process Exception Files.
4 In the event that the Parties cannot reach agreement on the handling of Exception Files through the
5 meet and confer process, the matter may be submitted to the Court for determination.

6 22. Mobile and Handheld Device Documents and Data. If responsive and unique data that can
7 reasonably be extracted and produced in the formats described herein is identified on a mobile or
8 handheld device, that data shall be produced in accordance with the generic provisions of this
9 protocol. To the extent that responsive data identified on a mobile or handheld device is not
10 susceptible to normal production protocols, the Parties will meet and confer to address the
11 identification, production, and production format of any responsive documents and data contained
12 on any mobile or handheld device.

13 23. Parent-child relationships. If responsive, Parent-child relationships that have been
14 maintained in the ordinary course of business shall be preserved for both ESI and hard copy
15 Documents. For example, for electronic production of a hard copy folder with Documents
16 contained in the folder, the cover/title of the folder shall be produced first, with all contents of the
17 folder in sequential Document order behind the containing folder. For email families, the parent-
18 child relationships (the association between emails and attachments) should be preserved, i.e.,
19 email attachments should be consecutively produced with the parent email record (in the case of
20 hyperlinked attachments, only one copy of the attachment will be produced with all agreed-upon
21 metadata referencing the attachment to any linked emails).

22 24. Encrypted or Password-Protected ESI. For any ESI that is produced in encrypted format or
23 is password-protected, the producing party will provide the propounding party a means to gain
24 access to those native files (for example, by supplying passwords).

APPENDIX 2 – METADATA FIELDS

| Field | Definition | Doc Type |
|--------------|---|--|
| ALLCUSTODIAN | Name(s) of person(s) or other data source (non-human) from where documents/files are produced. <i>Where redundant names occur, individuals should be distinguished by an initial which is kept constant throughout productions (e.g., Smith, John A. and Smith, John B.)</i> | All |
| BEGBATES | Beginning Bates Number (production number) | All |
| ENDBATES | Ending Bates Number (production number) | All |
| PGCOUNT | Number of pages in the document | All |
| FILESIZE | File Size | All |
| APPLICAT | Commonly associated application for the specified file type. | All |
| FILEPATH | Original file/path of the location where the item was located at the time of collection, where applicable. This should include location, and, for e-documents and e-attachments, file name, and file extension. Folder names and path should be included, and, for emails and attachments collected from a container such as a .pst, the full folder path within the container. Any container names should be included in the path. | E-document, Email, excluding cloud-based documents. Equivalent fields are included in the Google Drive & Linked Documents & Google Mail section below. |
| FILENAME | Original file name at the point of collection | E-Document. |

| Field | Definition | Doc Type |
|--------------------|---|--|
| NATIVEFILELINK | For documents provided in native format only | All |
| TEXTPATH | File path for OCR or Extracted Text files | All |
| LINKBEGBATES | One-to-many field used to identify the beginning Bates value for any Google Drive linked documents referenced within a given Gmail document | Gmail documents containing linked Google Drive documents |
| LINKSOURCEBEGBATES | One-to-many field used to identify the beginning Bates value for any source Gmail documents linking to a given Google Drive document | Google Drive documents linked to Gmail documents |
| MSGID | Email system identifier assigned by the host email system. This value is extracted from parent message during processing | E-mail |
| FROM | Sender | E-mail |
| TO | Recipient | E-mail |
| CC | Additional Recipients | E-mail |
| BCC | Blind Additional Recipients | E-mail |
| SUBJECT | Subject line of e-mail | E-mail |
| PARENTMSGID | Where the item is an email which is a REPLY or FORWARD, the ConversationID of the original email which was REPLIED to or FORWARDED | E-mail |
| CONVERSATIONID | Email thread identifier | E-mail |
| ATTACHBATES | Bates number from the first page of each attachment | E-mail |
| BEGATTACH | First Bates number of family range (i.e. Bates number of the first page of the parent e-mail or document) | E-mail, E-Documents |

| Field | Definition | Doc Type |
|---|--|------------------------------|
| ENDATTACH | Last Bates number of family range (i.e. Bates number of the last page of the last attachment or, if no attachments, the document itself) | E-mail, E-documents |
| ATTACHCOUNT | Number of attachments to an e-mail | E-mail |
| ATTACHNAMES | Names of each individual Attachment, separated by semi-colons | E-mail, E-documents |
| DATESENT (mm/dd/yyyy hh:mm:ss AM) | Date Sent | E-mail |
| DATERCVD (mm/dd/yyyy hh:mm:ss AM) | Date Received | E-mail |
| SORTDATE (mm/dd/yyyy hh:mm:ss AM) | Date of the parent e-mail or document | E-mail and documents |
| HASHVALUE | MD5 hash value | All |
| TITLE | Internal document property | E-document |
| AUTHOR | Internal document property | E-document |
| DATECRTD (mm/dd/yyyy hh:mm:ss AM) | Creation Date | E-document |
| LAST MODIFIED BY | Last person who modified (saved) a document | E-document |
| LASTMODD (mm/dd/yyyy hh:mm:ss AM) | Last Modified Date | E-document |
| HiddenContent | Denotes if file contains hidden content. Format: Yes/No value. | Loose files and attachments. |

| Field | Definition | Doc Type |
|------------------|---|----------|
| DocumentType | Descriptor for the type of document: “E-document” for electronic documents not attached to e-mails; “E-mail” for all e-mails; “E-attachment” for files that were attachments to e-mails; “Physical” for hard copy physical documents that have been scanned and converted to an electronic image; and “Messaging Application” for all Messages related to Messaging Applications e.g., Slack, HipChat, uChat, WhatsApp, Google Chat, and GroupMe. | All |
| Importance | High Importance - indicates Priority E-mail message. | E-mail |
| Redacted | Descriptor for documents that have been redacted. “Yes” for redacted documents; “No” for un-redacted documents. | All |
| ProdVol | Name of media that data was produced on. | All |
| Confidentiality | Confidentiality level if assigned pursuant to any applicable Protective Order or stipulation. | All |
| Other Custodians | Custodians of all duplicate documents. Multiple values separated by semi-colons. | |

| Field | Definition | Doc Type |
|----------------------------|---|--|
| Duplicate Filepaths | Original file/path of the locations where the unproduced duplicate items were located at the time of collection. This should include location, and, for e-documents and e-attachments, file name, and file extension. Folder names and path should be included, and, for emails and attachments collected from a container such as a .pst, the full folder path within the container. Any container names should be included in the path. Multiple values should be separated by semi-colons. | E-Document |
| LINKGOOGLEDRIVEDOCUMENTIDS | One-to-many field containing the Google DocumentIDs for any Google Drive linked documents referenced within a given Gmail document. | Gmail documents containing linked Google Drive documents |

| Field | Definition | Doc Type |
|----------|--|-----------------------------------|
| THREADID | ThreadID for non-email threaded communications | Non-email threaded communications |

Google Drive & Linked Documents & Google Mail

| Field | Definition | Doc Type |
|---------------|--|---------------------------------|
| DocID | Document ID obtained from Google Vault metadata at time of document collection. | Google Drive & Linked Documents |
| #Author | The email address of the person who owns the file in Drive. For a shared drive file, it shows the shared drive name. | Google Drive & Linked Documents |
| Collaborators | The accounts and groups that have direct permission to edit the file or add comments and users with indirect access to the file. | Google Drive & Linked Documents |

| | | |
|----------------|---|---------------------------------|
| Viewers | The accounts and groups that have direct permission to view the file and users with indirect access to the file. | Google Drive & Linked Documents |
| #DateCreated | The date a Google file was created in Drive. For non-Google files, usually the date the file was uploaded to Drive. | Google Drive & Linked Documents |
| #Date Modified | The date the file was last modified. | Google Drive & Linked Documents |
| #Title | The filename as maintained in the Google Drive and which was originally assigned. | Google Drive & Linked Documents |
| Filename | The file name that correlates to the metadata with the file in the export ZIP file. | Google Drive & Linked Documents |
| FileSize | The size of the file in bytes. | Google Drive & Linked Documents |
| Hash | The MD5 hash of the file. | Google Drive & Linked Documents |
| SlideRecording | Metadata about recordings. | Google Drive & Linked Documents |

| | | |
|---------------------|--|---------------------------------|
| ClientSideEncrypted | Indicates whether the file was encrypted in the Google Workspace using client-side encryption. | Google Drive & Linked Documents |
| DocumentType | The file type for Google files. | Google Drive & Linked Documents |
| SharedDriveID | The identifier of the shared drive that contains the file | Google Drive & Linked Documents |
| DocParentID | Unique identifier for page the site is a part of. | Google Drive & Linked Documents |
| SiteTitle | The name of the Sites page. | Google Drive & Linked Documents |
| Other | Includes users for whom Vault could not determine permission levels at the time of export. | Google Drive & Linked Documents |
| SourceHash | A unique hash value for each version of a file. | Google Drive & Linked Documents |
| DocumentType | The file type for Google files. | Google Drive & Linked Documents |

| | | |
|-----------------------|---|---------------------------------|
| PublishedURL | Metadata included with Google Drive exports for sites, including the address of the published page. | Google Drive & Linked Documents |
| SiteTitle | Metadata included with Google Drive exports for sites, including the name of the page. | Google Drive & Linked Documents |
| LabelName | Google Drive labels and fields. | Google Drive & Linked Documents |
| Account | The email address of the collected email account associated with the single custodian whose data survives the de-duplication process. | Google Emails & Chat (Messages) |
| GmailMessageId | A unique message ID used to manage specific messages with the Gmail API. | Google Emails & Chat (Messages) |
| Labels | Labels applied to the message by Gmail or the user. | Google Emails & Chat (Messages) |
| DriveUrl | Published URL corresponding to the Google Drive document. | Google Emails & Chat (Messages) |
| #DateFirstMessageSent | The timestamp for when the first message in a conversation was sent | Google Emails & Chat (Messages) |

| | | |
|---------------------------|--|---------------------------------|
| #DateLastMessageReceived | The timestamp for when the last message in a conversation was received. | Google Emails & Chat (Messages) |
| #DateFirstMessageReceived | The timestamp for when the first message in a conversation was received. | Google Emails & Chat (Messages) |
| #DateLastMessageReceived | The timestamp for when the last message in a conversation was received. | Google Emails & Chat (Messages) |
| RoomID | The space, group chat, or DM identifier that the message belongs to. | Google Emails & Chat (Messages) |
| Participants | The email addresses of all users who participated in the conversation. | Google Emails & Chat (Messages) |
| RoomName | The value of the space, Group Chat, list of accounts that participated. | Google Emails & Chat (Messages) |
| ConversationType | The message type. | Google Emails & Chat (Messages) |
| ParticipantPhoneNumbers | The phone numbers of the participants. | Google Voice |

| | | |
|-------------------------------|---|---|
| OwnerPhoneNumbers | The value includes multiple phone numbers when the user's number changed. | Google Voice |
| MissingGoogleDriveAttachments | This field will include the URL for each Google Drive document(s) referenced by link(s) within the Google Email, which linked document(s) was/were not produced with metadata link(s) to the Google Email document. | Google Emails, which contain links to Google Drive documents. |
| Non-Contemporaneous | In the event a Google Email has any link(s) to Google Drive documents that are dated later than the sent date of the Google Email document, a "Y" will be provided; "N" otherwise. | Google Emails |